```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                            y.
 GenEmbl:*
1: gb_bal:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   July 4, 2001, 18:33:32; Search time 6385.92 Seconds (without alignments) 8930.521 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1344157 seqs, 7733874588 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-117-447-1
3687
                                                                                                                                                                                                                                                          gb_bal: *
gb_ba3: *
gb_ba3: *
gb_ln1: *
gb_in2: *
gb_in3: *
gb_on: *
gb_ov: *
gb_pat: *
gb_pat: *
gb_pat: *
gb_pl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggataggaaaaaagctgt.....ttacattctatattaagtaa 3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                             em_htg_inv1:*
em_htg_inv2:*
em_htg_other:*
em_htg_rod:*
em_hum1:*
                                                                                                                                      em_fun:*
em_htgo_hum:*
em_htgo_rod:*
em_htg_bum1:*
em_htg_hum1:*
em_htg_hum3:*
em_htg_hum4:*
em_htg_hum6:*
em_htg_hum6:*
em_htg_hum7:*
em_htg_hum8:*
em_in:*
em_om:*
em_or:*
                            em_hum4:*
em_hum5:*
em_hum6:*
em_hum7:*
                                                                    em_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2688314
```

990 991 990 995 995 995 995 995 995 995 995 995		6 6 6 6 6 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8
gb_pr4: gb_pr5:* gb_pr5:* gb_pr7:* gb_pr7:* gb_pr8:* gb_pr9:* gb_pr9:* gb_r02:* gb_pr01:* gb_pr10:*	httgg httgg	

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

8	σ (η	ω	2	1	Result No.
77.4 77.4	487.6	3687	3687	3687	3687	Score
2.1	13.2	100.0	100.0	100.0	100.0	Query Match
2069 3399	3090	3632	3687	3687	3687	Query Match Length DB
4 4 5 5	2	ري د	9	9	9	DB
E10125 E10126	AF228338	BSSBSA AFOSSS79	AX033303	AX000218	A93832	
E10125 DNA encodin E10126 DNA encodin	AF228338 Bacillus	X71092 B.stearothe	AX033303 Sequence	AX000218 Sequence	A93832 Sequence 1	Description

ï

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                   RESULT 1
A93832
LOCUS
DEFINITION
ACCESSION
                                                                                         FEATURES
                                                                                                                                                                                                                                                                     000 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                    000
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ò
                                                                                                                                                                                                                                 sig_peptide
CDS
                                                                                                                                                                                                                                1 (bases 1 to 3 Lubitz, W. and SI RECOMBINANT EXPR Patent: WO 97282
                                                                                                                                                            A93832
Sequence
A93832
A93832.1
                                                                                                                                  Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                              Bacillus/Staphylococcus
                                                                                                 LUBITZ
                                                                                       ,W. and Sleytr,U.

INAM EXPRESSION OF S-LAYER PROTEINS

WO 9728263-A 1 07-AUG-1997;

WERNER (AT); SLEYTR UWE (AT)

Location/Qualifiers
                                                                                                                                                                                                                                 \overline{\phantom{a}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ...
                                                                                                                                                                        3687
1 from Pa
/transl_table=11
/protein_id="CAB69613.1"
/protein_id="CAB69613.1"
/db_xref="C1:6741964"
/translation="MDRKKAVKLATASAIAASAFVAANPNASEAATDVATVVSQAKAQ
/translation="MDRKKAVKLATASAIAASAFVAANPNASEAATDVATVVSQAKAQ
FKKAYYTYSHTVTETGEFPNINDVYAEYNKAKKRYRDAVALVNKAGGAKKDAYLADLQ
                                                        /organism="Bacillus stearothermophilus"
/strain="pV72"
/db_xref="taxon:1422"
/clone="SBSA"
                                 /codon_start=1
                                       /note-"unnamed
                                                                                                                                                                                                                                .3687
                                                                                                                        3687)
                                                                                                                                                                        87 bp DNA
Patent WO9728263
                                                                                                                                                                                                                                 2
5
1
1
1
1
1
1
1
1
6
7
6
7
                                                                                                                                                                                                                                                                                                                                                41
96
96
96
975
                                                                                                                                                                                                                                                                                                                                                                                          6 ω 4s
                                                                                                                                                                                                                                                                          A00661
APCAMESA
BEU78764
BBU7896
AF103869
AE001575
AE001580
AC022322
BBU44912
AC0236679
AC0236679
AC0233141
AC0233744
                                                                                                                                                                                                                                                                                                                                                                             DDPROKING
L AF323001
AF202180
                                                                                                                                                                                                                                                                                                                                                                                                      AE001373
E08995
                                                                                                                                                                                                                                      DDG14D5
MHLMP34GN
AF269225
AF269226
AF269238
AF269237
                                                                                                                                                                                                                                                                                                                                                                                                                        AC024253
AC087877
PFMAL4P1_1
S76368
HSV3PRGEN
                                                                                                                                                                                                                                                                                                                                                                 PFRESAR1
PFAL18528
                                                                                                                                                                                                                                                                                                                                                                                                 MC049
                                       protein
                                                                                                                              group;
                                                                                                                              Bacillus
                                       product,
                                                                                                                                                                               PAT
                                                                                                                                                                                                                              AP002460 Arabidops
AF056936 plasmodiu
AC024253 Homo sapi
AC024253 Homo sapi
AC027877 Mus muscu
Continuation (2 of
S76368 ORF 5' of E
M86409 Herpesvirus
X64346 Herpesvirus
X64001373 plasmodiu
E08995 DNA encodin
Z33981 D.discoideu
AF202180 plasmodiu
AF202180 plasmodiu
AF202180 plasmodiu
AF202180 plasmodium
AC074354 Oryza sat
U7296 Borrelia bu
U72996 Borrelia bu
AF001575 Borrelia bu
AF001575 Borrelia bu
AF001575 Borrelia bu
AF002322 Homo sapi
U44912 Borrelia bu
AC023324 Homo sapi
U44912 Abrossandiu
AC023334 Homo sapi
U44912 Abrossandiu
AC023334 Homo sapi
AX08374 Sequence
X53237 D. discoide
X95601 M.hominis I
AF269225 Cloning v
AF269236 Cloning v
AF269237 Cloning v
AF269237 Cloning v
AF269237 Cloning v
                                                                                                                                                                              22-JAN-2000
                                           Ş
                                                                   δÃ.
                                                                                   g
                                                                                             Ωy
                                                                                                                    γQ
                                                                                                                                    g
                                                                                                                                               δõ
                                                                                                                                                                       δõ
                                                                                                                                                                                    В
                                                                                                                                                                                                            В
                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                            BASE
                                밁
                                                         멍
                                                                                                            밁
                                                                                                                                                            밁
                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 3687
                                                                                                                                                                                                                                                                                                                           mat_peptide
COUNT 1316
                                                                     481
                                                          481
                                                                                   421
                                                                                               421
                                                                                                            361
                                                                                                                       361
                                                                                                                                    301
                                                                                                                                                301
                                                                                                                                                            241
                                                                                                                                                                        241
                                                                                                                                                                                     181
                                                                                                                                                                                                181
                                                                                                                                                                                                             121
                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                          _
```

```
NLDKAKAVDOJ NYLEW YIDAKKALDABAALTEK YENYAKKALDABAALTEK YESYSA INTOKKA
VELTANPUNGTLKLOLSAANABDTUNUNTYRT YKVDGNIF FALNTADYSLSTDGKTIT
VDASTF FENNTEY KVVVKGIKDKNGKE FEEDAFT KLENDAVVTOYFGTINTINUTSYN
LAAGTEDFIDDTLTVVFDKLLABETVNSNYTITDVETGKRIPVLASTSGSTITITLKE
ALVTCKOYKLAINNVKTLTG YNAEAY ELVFTANASAPTVATAPTTLGGTTLSTGSLTT
NYMGKLAGGVNEAGTYY PGLOFTTIFATK LDEST LADNFYLYEKESGTVAS ELKYNA
DAKMYTLYPKADLKENTIYOIK IKKGLKSDKGIELGTYNEKTYEFKYODLTAFTYISY
TSKNGDAGLKYTEAOBETVKFSENLATF NATTYSGSTITYGOVAVVKAGANLSALTAS
DIIPASVEAVTGODGTYKYKVAANOLERNOGYKLVVFGKGATAPVKDAANATLATNY
IYTFTTEGODYTAPTVYKYKCDSLKOADAVTTLTNVDAGOKFTIGFSELKTSGSL
VGKKYTVEKLTINNGWVDAGTCTTVSVARKTDANGKYTAAVVTLTGLDNDKDKDAKLRLV
VDKSSTDGIADVAGNVIKEKDILIRNSHHTVASVKAAADKDGONASAAFFTSTAID
TTKSLLVEFNETDLAEVKPENLVVKDAGANAVGTYTALDGSTNKFYFTYSQELKAGT
VYSYTILGSVANTDEVKPALVGVGSWNGTSTTOHAGAVWVDRSKTITIEFSDS
VPNPTITLKKADGTSTNYTLVNUNNENKTYKIVFHKGYTLDEFTOYELAVSKDEOTG
TDIDSKVTFITGSVATDEVKPALVGVGSWNGTSTODAAATRLKSVADFVAEPVALOF
SEGIDLTNATYTVTNITDDKTYFKT
                                  YKIVVSGVKDAAGNVADTITFYIK*
91. .3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PYEIKTRTVILDRVYGKTTRDLLRSTFKAKAQELRDSLIYDITVAMKAREVQDAVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYETYVFKANPKSGEARVATYIDAYNYATKLDEMRQELEAAVQAKDLEKAEQYYHKI
.3684
660 c
```

```
cal Similarity
3687; Conserv
100.0%; ilarity 100.0%; Conservative (
 0;
          Score 3687;
Pred. No. 0;
 Mismatches
                   DВ
 0;
                  9:
                  Length 3687;
 Indels
 0,
```

0;

മ

715

Ω

996

```
gcaaaagcacagttcaaaaaaagcatactatacttacagccatacagtaacggaaactggt 180
                                                                                                                                                                                                                                                                                                                                                                                        GATATTACCGTTGCAATGAAAGCGCGCGCGAAGTACAAGACGCTGTGAAAGCAGGCAATTTA
          gatattaccgttgcaatgaaagcgcgcgaagtacaagacgctgtgaaagcaggcaattta
                                                                                                                                                                                                                             ttacaaaaagaatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgt
                                                                                                                                                                                                                                                                       atggataggaaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcattt
                                                                                                                                                                                                                  TTACAAAAAGAATATGAAACTTACGTTTTCAAAGCAAACCCTAAATCTGGCGAAGCTCGT
                                                                                                                                                                                                                                                            ATGGATAGGAAAAAGCTGTGAAACTAGCAACAGCAAGTGCTATTGCAGCAAGTGCATTT
                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                               480
                                                                                                                                                  480
                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                    60
```

ggacct GGACCT
agt AGT
ggtggt GGTGGT
ttacgag
Caattgca
caggtact
attaaagacaaa
ggatge GGATGC
gctgcaaat
baaagctgtt BAAAGCTGTT
CCAAAAGTA CCAAAAGTA CCAAAAGTA GCAGATGAA GCAGATGAA
9

оу Оу ор

D 64 D

, oy ob

Oy Oy Db

Qy	Db	Qy	Db .	Q V	Дb	Оy	Db	Оy	DЬ	Qy	ДЪ	Qy	рь	Оy	Db	Qy	рь	Оу	DЬ	Qy	рb	Qy	Db	Οy	DЬ	Оу	дъ	Qy	Db	Qy	Db	Оy	рb	Qy	рb
2821	2761	2761	7	2701	2641	2641	2581	2581	2521	2521	2461	2461	2401	2401	2341	2341	2281	2281	2221	2221	2161	2161	2101	2101	2041	2041	1981	1981	1921	1921	1861	1861	1801	1801	1741
gcagcaggtaatgcggtagctggtactgtaacagcattagacggttctacaaataaat	TTGAATTCAATGAAACTGATTTAGCGGAAGTTAAACCTGAGAACATCGTTGTTAAAGA			aacqcttctqctqcattcccaacaaqcactqcaattqatacaactaaqaqcttatta	G =	gttacaacagctggagacacactgtagcttctgtgaaagctgctgctgacaaagatggt	TCTACTGATGGAATTGCTGATGTAGCTGGTAATGTAATG	ctactgatggaattgctgatgtagctggtaatgtaattaaggaaaaagatattttaat	TTAACTGGTCTTGACAATAACGACAAAGATGCGAAATTGCGTCTGGTAGTAGATAAGTCT	taactggtcttgacaataacgacaaagatgcgaaattgcgtctggtagtagataagtc	ACTGTATCAGTTGCTCCTAAGACAGATGCAAATGGTAAAGTAACAGCTGCTGTGGTTACA	ctytatcayttyctcctaagacayatgcaaatggtaaagtaacagctyctytygttac	GCAAAGTAACTGTCGAGAAATTAACAAACAACGGATGGGTAGATGCTGGTACTGGAACA	gcaaagtaactgtcgagaaattaacaaacaacggatgggtagatgctggtactggaac	CACTATCCAATTTAGCGAAGAATTAAAAACTTCTAGTGGTTCTTAGTGGG	aaaaattcactatccaatttagcgaagaattaaaaacttctagtggttctttagtgg	TCTTTAAAAGACGCTGATGCAGTTACTACACTTACGAACGTTGATGCAGG		ATCTATACATTTACAACTGAAGGTCAAGACGTAACAGCACCAACGGTTACAAAAGTATTC	tchatacatttacaactgaaggtcaagacgtaacagcaccaacggttacaaaagtatt	CAACAGCTCCTGTTAAAGATGCTGCAAATGCAAATACTTTAGCAACTAAC	aaggtgcaacagctcctgttaaagatgctgcaaatgcaaatactttagcaactaact	AAGTTGCTGCTAACCAATTAGAACGTAACCAAGGGTACAAATTAGTGTTCGG	tgaaagttgctgctaaccaattagaacgtaaccaagggtacaaattagtagtgttcg	CAAGATGGAACATACAA	caagtgacatcattccagctagtgttgaagcggttactggtcaagatggaacataca	CA.	${f caatcacatacggtcaagttgctgtagtaaaagcgggtgcaaacttatctgctcttac}$		ttactgtgaagttctcagagaatttaaatacatttaatgctacaaccgtttcgggta	TTAGCGTAACGTCTAAAAATGGCGACGCTGGATTAAAAGTAACTGAAGCTCAAGA	ttattagogtaacgtotaaaaatggogacgotggattaaaagtaactgaagotcaag	AGGCACTGT	aggcactgttaacgagaaaacatatgagttcaaaactcaagacttaactgctcctac	
2880	2820	2820	76	2760	2700	2700	2640	2640	2580	2580	2520	2520	2460	2460	2400	2400	2340	2340	2280	2280	2220	2220	2160	2160	2100	2100	2040	2040	1980	1980	1920	1920	1860	1860	1800

```
REFERENCE
AUTHORS
TITLE
                                                                DEFINITION
ACCESSION
VERSION
                                                                                         RESULT
AX000218
LOCUS
                                         SOURCE
ORGANISM
                                                                                                                                  밁
                                                                                                                                               Qy
                                                                                                                                                                 DЪ
                                                                                                                                                                                ρ
                                                                                                                                                                                                   В
                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                               δ.
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                         KEYWORDS
                                                                                                                                   3661
                                                                                                                                                  3661
                                                                                                                                                                    3601
                                                                                                                                                                                                                                   3481
                                                                                                                                                                                                                                                   3481
                                                                                                                                                                                                                                                                    3421
                                                                                                                                                                                                                                                                                   3421
                                                                                                                                                                                                                                                                                                    3361
                                                                                                                                                                                                                                                                                                                   3361
                                                                                                                                                                                                                                                                                                                                                   3301
                                                                                                                                                                                                                                                                                                                                                                 3241
                                                                                                                                                                                                                                                                                                                                                                                                  3181
                                                                                                                                                                                                                                                                                                                                                                                                                                  3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                 3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                  3301
                                                                                                                                                                                                                                                                                                                                                                                 3241
                                                                                                                                                                                                                                                                                                                                                                                                                  3181
                                                                                                                                                                                                                   3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2821
                                                                                                                                         gatactattacattctatattaagtaa
                                                                                                                                                                 ccagttgcccttcaattctcagaaggtatcgatttaacgaattgcaactgtgacagtaaca
                                                                                                                                                                                                                                                                                                  tctgttgctactgacgaagtaaaacctgctctagtaggcgttggttcatggaatggaaca
                                                                                                                                                                                                                                                                                                                                                                 gctgacggaacttcatttactaattacacttttagtaaatgtaaatgaaataaaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aaaacaattacaattgaattcagcgattcagttccaaaccccaacaatcactcttaagaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gcgaatccaacgttatcttcaatcagcattgctgacggtgcagttaacgttgaccgttct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATACTATTACATTCTATATTAAGTAA
                                                                                                                                                                                                                                                                                                                                  TCTGTTGCTACTGACGAAGTAAAACCTGCTCTAGTAGGCGTTGGTTCATGGAATGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAACAATTACAATTGAATTCAGCGATTCAGTTCCAAACCCAACAATCACTCTTAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGAATCCAACGTTATCTTCAATCAGCATTGCTGACGGTGCAGTTAACGTTGACCGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtattcactccatctcaagaattaaaagctggtacagtttactctgtaacaattgacggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGACGGAACTTCATTTACTAATTACACTTTAGTAAATGTAAATAATGAAAATAAAACA
                                                                         AX000218
Sequence
AX000218
1 (bases 1 to 3687)
Lubitz, W. and Resch,
SECRETION OF CARRIER
                        Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Bacillus.
                                                                  AX000218.1
                                                                                 ...
and Resch,S.
OF CARRIER-B
                                                                                from
                                                                  GI:7240682
CARRIER-BONDED
                                                                                          3687
                                                                                 Patent
                                                                                        dq
                                                                                 DNA
WO9906567.
                                                                                                                                                  3687
                                                                                                                                  3687
PROTEINS
OTNI
                                                                                           PAT
THE PERIPLASMA AND
                                                                                          10-MAR-2000
                                                                                                                                                                  3660
                                                                                                                                                                                 3660
                                                                                                                                                                                                                  3600
                                                                                                                                                                                                                                                  3540
                                                                                                                                                                                                                                                                                  3480
                                                                                                                                                                                                                                                                                                                                                 3360
                                                                                                                                                                                                                                                                                                                                                                                3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3000
                                                                                                                                                                                                   3600
                                                                                                                                                                                                                                  3540
                                                                                                                                                                                                                                                                   3480
                                                                                                                                                                                                                                                                                                   3420
                                                                                                                                                                                                                                                                                                                  3420
                                                                                                                                                                                                                                                                                                                                  3360
                                                                                                                                                                                                                                                                                                                                                                 3300
                                                                                                                                                                                                                                                                                                                                                                                                 3240
                                                                                                                                                                                                                                                                                                                                                                                                                 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                 3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2880
```

:

```
mat_peptide
BASE COUNT 1316 (
ORIGIN
                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                  Ş
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                           Š
                                                                                   B
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 3687; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                           361
                                                                                   301
                                                                                                                                    301
                                                                                                                                                                                         241
                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             سر
gtagcaacttacatcgatgcttacaactatgcaacaaaattagacgaaatgcgccaagag
                                                                                                                                                                                      gaattcccaaacattaacgatgtatatgctgaatacaacaaagcgaaaaacgataccgt
                                                                                                                                                                                                                                                                                                                                                                                                         atggataggaaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcattt
                                                                                                           ttacaaaaagaatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgt
                                                                                   TTACAAAAAGAATATGAAACTTACGTTTTCAAAGCAAACCCTAAATCTGGCGAAGCTCGT
                                                                                                                                                                                                                                                                                                  GAATTCCCAAACATTAACGATGTATATGCTGAATACAACAAAGCGAAAAAAACGATACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGATAGGAAAAAAGCTGTGAAACTAGCAACAGCAAGTGCTATTGCAGCAAGTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR SPACE
Patent: WO 9906567-A 1 11-FEB-1999;
LUBITZ WERNER (AT); RESCH STEPHANIE
Location/Qualifiers
1. .3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; ilarity 100.0%; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIDKRAKANDOJNY ZIENY DIAKKELDADBAALTEKESVEA INTOKKA
VELTAVPYNGTIKLOLSAAANBETVANINTYKE YKKALDADBAALTEKESVEA INTOKKA
VELTAVPYNGTIKLOLSAAANBETVANINTYKE YKKALDADBAALTEKESVEA INTOKKA
VELTAVPYNGTIKLOLSAAANBETVANINTYKE YKKALDAVYTOVEGTNYTHNITSYN
VDASTPEENNTEY KVVVKG IKDKNIGKEK EDALFFKLENDAVYTOVEGTNYTHNITSYN
LAAGTEPDIDDTILTVEPDKILLA DETYNSSNYT I DVETGKE I PU LA STSGSTIT I FILKE
ALVTGKOY KLA I NNVKTLTGY NAEAY ELVETANASAPTVATAPTTLGGTTLSTGSLTT
NVWGKLAGGVNBAGTYY PGLOFTTE ATYKLDESTLADNEVLY VERSGTVVASELKY NA
DAKMYTLYPKADLKENTIYOJK IKKGLKSOKG ILGTYNEKTYEFTODLTAPTV I SY
TSKNGDAGLKVTEAQEETY KESENLNIF ENATTVAGST I TYGQVAVVKAGANLSALTAN
DI IPASVEAVTGCOGTYK VKVAANQLEENQGYKLVYFGKAGTAPVKDAANANTLATNY
IYTETTEGODVTAPTVTKVEKGDSLKDADAVTTLTNVDAGQKFTIQFSELKTSSGSL
VGGKVTVEKLTINNGWODGTGTTVSVAPKTDANGKVTAAVVTLTGLDNNUKDAKLRLV
VDKSSTDGIADVAGNTIKEKDILIRYNSWRHTVASVKAAADKDGQNASAAFPTSTA ID
TYKSLLVEFNETÜLAEVK PENITVKDAAGNAVAGTYAALDGTNKETVETPSQELKRGT
TYSSTDGIADVAGNTISKY TISFKTYSAANPILSSI SADGAVNAVDRSKTIT IEESDS
VPNPTITLKKADGTSFTNYTLVNVNNENKTYKIVFKKGYTLDEFTQYELAVSKDEPVALOF
TDIDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAAARTRIKSVADEVALOF
TOLDSKYTFIGGSVATDEVKPALAUGUSGWNGTSYTODAGNTARLIGUSGWNGTSYTODAGNTALOF
TOLDSKYTTON TOLDSKYTODAGNTANDAGNTARLIGUSGWNGTSYTODAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDAGNTANDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MDRKKAVKLATASAIAASAFVAANPNASBAATDVATVVSQAKAQ
FKKAYYTYSHTVTETGBEPILINDVYAEYNKAKRRYRDAVALMAGGAKKDAYLADLQ
KEYETYVFKANPKSGBARVATYIDAYNYATKLDEMRQBLEAAVQAKDLEKAEQYYKHK
PYEIKTRTVILDRVYGKTTRDLLRSTFKAKAQELRDSLIYDITVAMKAREVQDAVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Bacillus stearothermophilus"
/strain="pV72"
/db_xref="taxon:1422"
/clone="SBSA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YKIVVSGVKDAAGNVADTITFYIK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEGIDLTNATYTYTNITDDKTYEVISKESYDADHDAGATKETLVINTYTPLYLDNSKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="CAB77069.1"
/db_xref="GI:7240683"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="unnamed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 3687;
Pred. No. 0;
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       product'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3687;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                 240
                              420
                                                                                                                                    360
                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                   360
                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Db Db Db Db Db Db Db Db

,		TTAGGTGGTACAAC	GCAAACGCATCAGCACCAACTGTTGCTACCGCTCCTACTAC
י אַ		tttaggtggtac	cctacta
_	Db.	AGCTTACGAGTTAGTGTTC 1440	1381 GCTATCAATAATGTTAAAACATTAACTGGTTACAATGCAGAAGG
	Qy	tagto	ctatcaataatgttaaaacattaactggttacaatgcaga
_	Дb		321 GGTTCTACAATTACTATTACGTTAAAAGAAGCGTTAGTA
у 24	ОУ	Contabant 138	321 aattotacaattactattacattaaaaaaaaacattaata
ъ 2:	Db	Aattgcatctacttct 1320 	1401 AGGGTTACTATTACAGGTTGAAACTGGAAAAGGCATTCAGTAATT
Ϋ́ 2:	γQ	GTAAACAGCTCG 126	261 sacrtactattacagnatatta
-	ממ	gtaaacagctcg 126	1201 gacgatactttaacagtagtatttgataagttgttagcacctgaaact
< 5 N N	Ov Db	CAGGTACTTTCGACACT 1200	1141 TTTGGAACTAATGTAACAAACACACTTCTGTAAACTTAGCAG
	ų. Vo	tactttcgac	gaactaatgtaacaaacaacacttctgtaaacttagca
•	מם	TGTAGTTACTCAAGTG 114	81
у 21	Qy	ctcaagtg 114	.081 qaatttaaaqaaqatqcattcactttcaaqqttcqaaat
ъ 21	. Db	attaaagacaaaaatggcaaa 1080 	1021 CCGGAGATAGAGGGGGGGTATTAAAGGTAGTTAGAAGGTATTA
y 21	QY	WACICCA IOS	01
b 2(מם	0.2	ybi acggcagatgtitccttatctacagacggaaaaactatcacta
у 2(Qy		C1 C
ъ 15	Db	TCCATTTCCCCTTAAT 060	######################################
у 19	ΥQ	GAAGATACA 90	#1 GCMG1MCCMG1GMACACIAAAATTACAACTTICAGCF
	מם		41 gcagtaccagtgaacggaacactaaaattacaactttcagct
y 19	Oy	TTGAATTAAC	81 ACTCCAAAAGTTGAAA
ъ 16	לם	ttgaattaaca 84	à
у 18	Qy	AAGCTGCGCTT 78	21 TTCAAAACTGAACTAACAGAAGTAGCGAAAAAAGCATTAGAT
	מס	. 78	21 ttcaaaactgaactaacagaagtagcgaaaaaagcattagat
	Qy	CAGATGO	61 GACAAAGCTAAAGCT
-		caaaagtaacagatgct 720	661 gacaaagctaaagctgctgttgatcaaatcaatcaatacttaccaaaagtaa
1 5		STGAAAGCAGGCAATTTA 660	ATATTACCGTTGCAATGAAAGCGCGCGAAGTACAAGACGCT
	- K	- 42	601 gatattaccgttgcaatgaaagcgcgcgaagtacaagacgctg:
	Db	CGACAGCTTAATTTAT 600	541 GATTTACTTCGCTCTACATTTAAAGCAAAAGCACAAGAACTTCGCGACA
	Z. QY	gctta	41 gatttacttcgctctacatttaaagcaaaagc
_	ДЬ	TAAAACAACTCGT 54	00
)у 1:	Qy	aaacaactcut 54	81 ccttatgaa
ъ 1:) Db	ATCACAAAATT 48	
)y 1:	, Qy	e c	21 0
		CGAAATGCGCCAAGAG 420	361 GTAGCAACTTACATCGATGCTTACAACTATGCAACAAAATTAGACGAAATGCGCCAAGAG

B 03 D 03

,

25 50 50 50

ρ γ 0y 0y 0b 0b

₽ 5

2 VQ

Qy

д У

```
밁
                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                         QV
                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
3661
                                                                                                                3481
                                                                                                                                       3481
                                                                                                                                                                                                          3361
                                                                                                                                                                                                                                3361
                                                                                                                                                                                                                                                        3301
                                                                                                                                                                                                                                                                               3301
                                                                                                                                                                                                                                                                                                    3241
                                                                                                                                                                                                                                                                                                                                                  3181
                                                                                                                                                                                                                                                                                                                                                                       3181
                                                                                                                                                                                                                                                                                                                                                                                              3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3061
                                                                                                                                                                                                                                                                                                                          3241
                                                                                                                                                                                                                                                                                                                                                                                                                     3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2581
                    aacagcaagacttataagattgttgtaagtggagttaaagatgcagcaggtaatgttgca
                                                                gatactattacattctatattaagtaa
                                                                                                                          aatattactgatgataaaactgttgaagttatttcaaaagagagtgtagacgcagaccat
                                                                                                                                                                         ccagttgcccttcaattctcagaaggtatcgatttaacgaatgcaactgtgacagtaaca
                                                                                                                                                                                                                     agctatactcaggatgctgcagcaacacgacttcggtctgtagctgacttcgttgcggag
                                                                                                                                                                                                                                                                 tctgttgctactgacgaagtaaaacctgctctagtaggcgttggttcatggaatggaaca
                                                                                                                                                                                                                                                                                                               gtttcaaaagattttcaaactggtactgatattgatagcaaagttacattcatcaccaggt
                                                                                                                                                                                                                                                                                                                                              gcgaatccaacgttatcttcaatcagcattgctgacggtgcagttaacgttgaccgttct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtgagagataaagtaggtaacacaatctctaaatacattacttcgttcaagactgtatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtattcactccatctcaagaattaaaagctggtacagtttactctgtaacaattgacggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gttgaattcaatgaaactgatttagcggaagttaaacctgagaacatcgttgttaaagat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAAACGCTTCTGCTGCATTCCCAACAAGCACTGCAATTGATACAACTAAGAGCTTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cgttacaacagctggagacacactgtagcttctgtgaaagctgctgctgccaaagatggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tctactgatggaattgctgatgtagctggtaatgtaattaaggaaaaaggatattttaatt
                                                                                                               AATATTACTGATGATAAAACTGTTGAAGTTATTTCAAAAGAGAGTGTAGACGCAGACCAT
                                                                                                                                                             CCAGTTGCCCTTCAATTCTCAGAAGGTATCGATTTAACGAATGCAACTGTGACAGTAACA
                                                                                                                                                                                                                                                                                                    GTTTCAAAAGATTTTCAAACTGGTACTGATATTGATAGCAAAGTTACATTCATCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAGAGATAAAGTAGGTAACACAATCTCTAAATACATTACTTCGTTCAAGACTGTATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATTCACTCCATCTCAAGAATTAAAAGCTGGTACAGTTTACTCTGTAACAATTGACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTTACAACAGCTGGAGACACACTGTAGCTTCTGTGAAAGCTGCTGCTGACAAAGATGGT
                                                                                                                                                                                                         AGCTATACTCAGGATGCTGCAGCAACACGACTTCGGTCTGTAGCTGACTTCGTTGCGGAG
                                                                                                                                                                                                                                                        TCTGTTGCTACTGACGAAGTAAAACCTGCTCTAGTAGGCGTTGGTTCATGGAATGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGAATCCAACGTTATCTTCAATCAGCATTGCTGACGGTGCAGTTAACGTTGACCGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTACTGATGGAATTGCTGATGTAGCTGGTAATGTAATTAAGGAAAAAGATATTTAATT
                                         3660
                                                                                                                                                                                  3480
                                                                                                                                                                                                                               3420
                                                                                                                                                                                                                                                       3360
                                                                                                                                                                                                                                                                             3360
                                                                                                                                                                                                                                                                                                                         3300
                                                                                                                                                                                                                                                                                                                                                 3240
                                                                                                                                                                                                                                                                                                                                                                                             3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3000
                                                                 3600
                                                                                                                                                           3480
                                                                                                                                                                                                         3420
                                                                                                                                                                                                                                                                                                   3300
                                                                                                                                                                                                                                                                                                                                                                     3240
                                                                                                                                                                                                                                                                                                                                                                                                                                         3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2760
                                                                                                                                                                                                                                                                                                                                                                                                                  3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2640
```

. 2 Вb QΥ ДЬ Q Дď Qy 밁 Qy

```
mat_peptide
BASE COUNT 1316
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
AX033303
LOCUS
                                                                         Db
                            δÃ
                                                                                                          Ş
                                                                                                                                                  В
                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 3687; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3661
   121
                                    121
                                                                         61
                                                                                                            61
                                                                                                                                                                                       ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
                                                                                                                                                GATACTATTACATTCTATATTAAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AX033303
Sequence
AX033303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus/Staphylococcus
1 (bases 1 to 3687)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX033303.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lubitz,W.
                                                                                                                                                                                                                          100.0%; ilarity 100.0%; Conservative C
                                                                                                                                                                                                                                                                                                                                               /TETRISLATION="MODERKAYLATASA I AASAFVAANPNASEAATDVATVVSQAKAQ
FKKAYYTYSHTVTETGEFPNINDVYAEVNKKEAKTAKANPNASEAATDVATVVSQAKAQ
KEYETYYFKANPKSGEARVATYLDAYNYATKLDEMQGELEAAVQAKDLEKAEQYYHKI
PYEIKTTVILDRYVGTTTDALLRSTFKAKAQELTOSLIYDITVAMKAREWQDAVKAG
NLDKAKAAVDQINQYLPKVTDAFKTELTEVAKKALDADEAALTFKVESVSAINTONKA
VELTAVPVNGTLKLQLSAAANEDTVNNWTVRIYKKALDADEAALTFKVESVSAINTONKA
VELTAVPVNGTLKLQLSAAANEDTVNNWTVRIYKOVDRIF PFALMTADVSLSTDCKTIT
VDASTPEPENNTEYKVVVKGIKOKNGKEEKEKDAFTFKIKANDAVTOVGCTNLTNNTSVN
LAAGTFDTDDTLTVVFDKLLAPETVNSSNVTITDVETGKRIPVIASTSGSTITITLKE
ALVTGKQYKLAINNVKTLTGYNAEAYELVFTANASAPTYATAPTTLGGTTLSGSTLTTIKE
ALVTGKQYKLAINNVKTLTGYNAEAYELVFTANASAPTYATAPTTLGGTTLSGSTLTTIKE
ALVTGKQYKLAINNVKTLTGYNAEAYELVFTANASAPTYATAPTLGGTTLSGSSLLYNA
DAKMVTLYPKADLKENTIYQIKIKKGLKSDKGIELGTWAEKTYEKTQOLTAFTVISV
TSKNGDAGLKYTEAQEFTVKFSENLNTFNATTVSGSTLTYGQVAVVKAGANLSALTAN
DAKMVTLYPKADLKENTIYQIKIKKGLKSDKGIELGTWAEKTYEKTQOLTAFTVISV
TYSTTTEQQDYTAFTVTKVFKGDSLKNDAVTTLTNVDAGGKTAYVKDAANATLATNY
IYTFTTEQQDYTAFTVTKVFKGDSLKNDAVTTLTNVDAGGKTATOFSEELKTSSGSL
VGKNTVEKLTNNGWVDAGTGTTVSVAPKTDANGKVTAAVVTLTGLDNNDKDAKLRLV
VDKSSTDGIADYAGNUXEKDILIKYNSAMHTYASVKAADKDGQNASAAFPTSGTAID
TTKSLLVEFNNTULNENVKDAAGNAVAGTVTALDGSTNKTVETPSQELKAGT
VYSVTLDGVROKVGNTISKYITSFKTVSANFTLSSISTADGSTNAVTTTEESDS
VPNPTITLKKADGTSFTNYTLNNVNBENKTYKIVFHKOVTLDEFTGVELAVSKOFOTG
TDIDSKVTFITGSVATDEVKPALVGVGSWNGTSYTQDAAATRLRSVADFVAEPVALQF
SEGIDLTNATVTVTLINDKTYEVISKESVDADHDAGATKETLVINTVTPLVLDNSKT
YKIVSGVKDAAGNVADTITFYIK"

91. 3684
715. G 996 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WERNER
                                                                                                                                                                                                                                                                                                                                          ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DE 19903345-A 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3687 bp
1 from Patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .90
1. .3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/protein_id="CAC09982.1"
/db_xref="GI:10280104"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Bacillus stearothermophilus"
/db_xref="taxon:1422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="unnamed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:10280103
                                                                                                                                                                                                                                                                                                                                        .3684
660 c
                                                                                                                                                                                                                            0
                                                                                                                                                                                                                        Score 3687;
Pred. No. 0;
Nismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
DE19903345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                        p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus
                                                                                                                                                                                                                                                                                                                                        996
                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                              9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAT
                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          group;
                                                                                                                                                                                                                            0
                                                                                                                                                                                                                        Gaps
                                                                                                                                                  60
                                                                                                                                                                                     60
                                                                                                                                                                                                                            0
```

1320	1 aacgttactattacagatgttgaaactggaaaacgcattccagtaattgcatctacttct	Oy 126
1260 1260	1 gacgatactttaacagtagtatttgataagttgttagcacctgaaactgtaaacagctcg 	Qy 120 Db 120
1200 1200	1 tttggaactaatgtaacaaacaacacttctgtaaacttagcagcaggtactttcgacact	Qy 114 Db 114
1140 1140	1 gaatttaaagaagatgcattcactttcaagcttcgaaatgatgctgtagttactcaagtg 	Оу 108 БЬ 108
1080	11 ttcgaaaataatacggagtataaagtagtagttaaaggtattaaagacaaaaatggcaaa 	Qy 102 pb 102
1020 1020	l acggcagatgtttctttatctacagacggaaaaactatcactgtggatgcttcaactcca 	Qy 96 Db 96
960	1 gtaaacgtaaatactgtacgtatctataaagtggacggtaacattccatttgcccttaat 	Оу 90 Въ 90
900	1 gcagtaccagtgaacggaacactaaaattacaactttcagctgctgcaaatgaagataca 	Qy 84 Db 84
840 840		
780 780	11 ttcaaaactgaactaacagaagtagcgaaaaaagcattagatgcagatgaagctgcgctt 	7 7
720 720		ი თ
660	1 gatattaccgttgcaatgaaagcgcgcgaagtacaagacgctgtgaaagcaggcaattta 	Qy 60 Db 60
600	1 gatttacttcgctctacatttaaagcaaaagcacaagaacttcgcgacagcttaatttat	
540 540	1 ccttatgaaattaaaactcgcacagtcattttagatcgcgtatatggtaaaacaactcgt 	Oy 48
480 480	1 ctagaggctgctgttcaagcaaaagatttagaaaaagcagaacaatactatcacaaaatt 	Oy 42 Db 42
420 420	il gtagcaacttacatcgatgcttacaactatgcaacaaaattagacgaaatgcgccaagag 	Qу 36 Db 36
360 360)1 ttacaaaaagaatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgt 	Qy 30 Db 30
300		Qy 24 Db 24
240 240	31 gaattcccaaacattaacgatgtatatgctgaatacaacaagcgaaaaaacgataccgt 	Qy 18

											-;																	
Qy	DЬ	Qy	р О	Db Qy	B 5	o g	3 8	DЪ	D	Qy	Db ?	Ŷ	ОУ	Дb	Qy	B 2	}	P 64	В	Qy	Дb	Qy	Db	Qy	유 성	מט	VQ.	Дb
2341	2281	2281	2221 2221	2161 2161			2041	1981 1981	1921	1921	.86	œ	1801 1801	7	74	1681	0 1	1621 1621	1561	1561	1501	1501	1441	1441	1381		3 2	1261
caaaaattcactatccaatttagcgaagaattaaaaacttctagtggttctttagtgggt 2	AAAGGTGATTCTTTAAAAGACGCTGATGCAGGTTACTACCACTTACGAACGTTGATGCAGGT 2	aggtgattctttaaaagacgctgatgcagttactacacttacgaacgttgatgcagg	atctatacatttacaactgaaggtcaagacgtaacagcaccaacggttacaaaagtattc 2	aaaggtgcaacagctcctgttaaagatgctgcaaatgcaaatactttagcaactaact	GTGAAAGTTGCTGCTAACCAATTAGAACGTAACCAAGGGTACAAATTAGTAGTGTTCGGT	119499917977777777777777777777777777777	gcaagtgacatcattccagctagtgttgaagcggttactggtcaagatggaacatacaaa 2 	acaalcacalacgglcaagtlgctgtagtaaaagcgggtgcaaacttatctgctcttaca 2	CTGTGAAGT	ttactgtgaagttctcagagaatttaaatacatttaatgctacaaccgtttcgggtag		attaqoqtaacqtotaaaaatqqoqacqotqqattaaaaqtaactqaaqotoa	ttaggcactgttaacgagaaaacatatgagttcaaaactcaagacttaactgctcctaca 1		aaaatacaatctatcaaatcaaaattaaaaaaggcttgaagtccgataaaggtattga	gadccadad cacadageggecadad cygradeteldy geodadagegydacetedad		totaotttagotgataaotttgtattagttgaaaaagaatotggtacagttgttgottot 1 	TGGAACTTATTATCCTGGTCTTCAATTCACAACGACGATTGCTAAGTTAGACGA	ctggaacttattatcctggtcttcaattcacaacgatcttgctactaagttagac	THATCTACTGGTTCTCTTACAACAAATGTTTGGGGTAAATTGGCTGGTGGTGTGAATGAA	Latctactggttctcttacaacaaatgtttggggtaaattggctggtggtgtgaatga	ACTGCAAACGCATCAGCACCAACTGTTGCTACCGCTCCTACTTTAGGTGGTACAACT 1	ctgcaaacgcatcagcaccaactgttgctaccgctcctactactttaggtggtacaac	gctatcaataatgttaaaacattaactggttacaatgcagaagcttacgagttagtgttc 1	GTTCTRCAATTACTATTACGTTAAAAGAAGCGTTAGTAACTGGTAAACAATATAAACTT	aaactt	
-	Ω A	340	280 280	220			100	040	98	.98	و و		.86	œ	œ	74	1 6	68	62	62	.56	.56	.50	50	4 4		ı iu	.32

```
3421
                                                        3361
                                                                                                             3301
                                                                                                                                                                   3241
                                                                                                                                                                                                                                               3181
                                                                                                                                                                                                                                                                          3121
                                                                                                                                                                                                                                                                                                   3121
                                                                                                                                                                                                                                                                                                                              3061
                                                                                                                                                                                                                                                                                                                                                        3061
                                                                                                                                                                                                                                                                                                                                                                                  3001
                                                                                                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2461
ccagttgcccttcaattctcagaaggtatcgatttaacgaatgcaactgtgacagtaaca
                                                                                                         BBBBCBBttgcaBttgaBttcagcgattcagttccaBacccBaccaBtcactcttaBgBag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gttgaattcaatgaaactgatttagcggaagttaaacctgagaacatcgttgttaaagat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agctatactcaggatgctgcagcaacacgacttcggtctgtagctgacttcgttgcgag
                                                                                                                                                                GTTTCAAAAGATTTTCAAACTGGTACTGATATTGATAGCAAAGTTACATTCATCACAGGT
                                                                                                                                                                              gtttcaaaagattttcaaactggtactgatattgatagcaaagttacattcatcacaggt
                                                                                                                                                                                                                    TACAAAATTGTATTCCACAAAGGTGTAACACTTGACGAGTTTACTCAATATGAGTTAGCA
                                                                                                                                                                                                                                 tacaaaattgtattccacaaaggtgtaacacttgacgagtttactcaatatgagttagca
                                                                                                                                                                                                                                                                                                                                                                                 GCGAATCCAACGTTATCTTCAATCAGCATTGCTGACGGTGCAGTTAACGTTGACCGTTCT
                                                                                                                                                                                                                                                                                                                                                                                              gcgaatccaacgttatcttcaatcagcattgctgacggtgcagttaacgttgaccgttct
                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtgagagataaagtaggtaacacaatctctaaatacattacttcgttcaagactgtatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAMAACGCTTCTGCTGCATTCCCAACAAGCACTGCAATTGATACAACTAAGAGCTTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caaaacgcttctgctgcattcccaacaagcactgcaattgatacaactaagagcttatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cgttacaacagctggagacacactgtagcttctgtgaaagctgctgctgacaaagatggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tctactgatggaattgctgatgtagctggtaatgtaattaaggaaaaaagatattttaatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAACTGGTCTTGACAATAACGACAAAGATGCGAAATTGCGTCTGGTAGTAGATAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ttaactggtcttgacaataacgacaaagatgcgaaaattgcgtctggtagtagataagtct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAAAATTCACTATCCAATTTAGCGAAGAATTAAAAAACTTCTAGTGGTTCTTTAGTGGGT
                                                  AGCTATACTCAGGATGCTGCAGCAACACGACTTCGGTCTGTAGCTGACTTCGTTGCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAGAGATAAAGTAGGTAACACAATCTCTAAATACATTACTTCGTTCAAGACTGTATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTTACAACAGCTGGAGACACACTGTAGCTTCTGTGAAAGCTGCTGCTGACAAAGATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTACTGATGGAATTGCTGATGTAGCTGGTAATGTAATTAAGGAAAAAGATATTTTAATT
                            3480
                                                                              3420
                                                                                                                                                                                                                    3240
                                                                                                                                                                                                                                              3240
                                                                                                                                                                                                                                                                         3180
                                                                                                                                                                                                                                                                                                   3180
                                                                                                                                                                                                                                                                                                                              3120
                                                                                                                                                                                                                                                                                                                                                      3120
                                                                                                                                                                                                                                                                                                                                                                                 3060
                                                                                                                                                                                                                                                                                                                                                                                                          3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                               3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2400
                                                                                                                                                                                                                                                                                                                                                                                                                                     3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2520
```

Dp QA
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0

. 당 Qy В γQ 밁 QΥ В Qy В οy В δÃ В QΥ 밁 δõ В Q. 망 γO

Ξ

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3481
                                                                                                                                                                                                                                                                                                                                                                                                                             prim_transcript
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X71092.1 GI:312729
X71092.1 GI:312729
cell envelope protein; cell membrane associa protein; sbsA gene.
Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          surface-layer
Gene 145 (1),
94320770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (01-MAR-1993) Kuen,B., Institute of Microbiology and Genetics, University of Vienna, Dr. Bohrg. 9, 1030 Vienna, Aust Related sequences: D90050 and Gilmore, R.D., Mol. Microbiol., 6:1579-1586 (1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus/Staphylococcus group; Bacillus.

1 (bases 1 to 3832)
Kuen, B., Sleytr, U.B. and Lubitz, W.
Sequence analysis of the sbsA gene encoding the 130-kDa surface-layer protein of Bacillus stearothermophilus st. Gene 145 (1), 115-120 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kuen, B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stearothermophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to
/db_xref="Swiss-prot: p35825"
//db_xref="Swiss-prot: p35825"
//translation="mdrkkavklatasalfvarpnaseaatdvatvvsqakaq
/translation="mdrkkavklatasalfvakryrdavklakgakkdavladlq
keyetyvyshyvtetqeepen mdvyaeykakkryrdavlakalgakkdavladlq
keyetyvyshyvtetqeepen mdvyaeykateldemqqeleaavqakdlekaeqyyhki
pyeikttyvtldrvggertapleksteltevakkalddemaltekvesvsalintokka
nldkakaavdolingylpkvtdafkteltevakkaldadeaaltekvesvsalintokka
veltaavpvngtiklolsaaanedtynnytvrikkvdgriefalavavtgvsgtdkri
vdastpfenntekykvvkgikdekrefekearteklendavytqvegtnytnytsv
vdastpfenntekykvvkgikdekrefekearteklendavytqvegtnytnytsv
laagtfdtddtltvvedkllapetynksvtitdvetgkrievilgekesgtyvaselkyna
laagtfdtddtltvvedkllapetynksbestlabestladbefylderesgtvvkaganlselkyna
dakmytlvpkadlkentiyqikikkglksdkgielgtvnektyefktgdltaptviss
tsknedbalkvteadetykyegloftteatkldestladbefykgatapvkaganlsaltas
diipasveavtgqdgtykvkaaanglernqgyklvvfgkgatapvkdaanantlatny
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submission
                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bacillus st.
/strain="PV72"
/db_xref="taxon:1422"
t <1. .3767
                                                                                                                                                                                                                                                                                                    /gene="sbsA"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                 /product="surface laye
/protein_id="CAA50409,
/db_xref="GI:312730"
                                                                                                                                                                                                                                                                                                                                                       /gene="sbsA"
37. .3723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                          /gene-"sbsA"
1. .3767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3832)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sbsA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stearothermophilus'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                       protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s-layer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SbsA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s-layer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Austria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3540
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100
Best Local Similarity 100
Matches 3687; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             mat_peptide
                                                                               577
                                                                                             541
                                                                                                             517
                       697
                                                    637
                                                                  601
                                                                                                                           481
                                                                                                                                                                                    361
                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                         121
        721
                                     661
                                                                                                                                          457
                                                                                                                                                        421
                                                                                                                                                                       397
                                                                                                                                                                                                     337
                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                               217
                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                            157
                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                       37
                                                 ttcaaaactgaactaacagaagtagcgaaaaaagcattagatgcagatgaagctgcgctt
                      GACAAAGCTAAAGCTGCTGGTTGATCAAATCAATCAATACTTACCAAAAGTAACAGATGCT
                            gacaaagctaaagctgctgttgatcaaatcaatcaatacttaccaaaagtaacagatgct
                                                                                                            ctagaggctgctgttcaagcaaaagatttagaaaaagcagaacaatactatcacaaaatt
                                                                                                                                                                      gaattcccaaacattaacgatgtatatgctgaatacaacaaagcgaaaaaacgataccgt
                                                                                                                                                                                                                                                                                           gtcgctgcaaatccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaa
                                                                                                                                                                                                                                  1355
                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="sbs.
127. .3720
/gene="sbsA"
/product="surface 1/
3767. .3806
- 686 c 749 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IYTETTEGQDYTAPTVTKVFKGDSLKDADAVTTLTNVDAGQKFTIQFSEELKTSSGSL
VGKKVTVEKLTNNGWUDAGTCTTVSVAFKTDANGKVTAAVVLLGLDNNDKDAKLRLV
VDKSSTDG1ADVAGNVIKEKDILIRYNSWHTVASVKAAADDLGGDNAAAFPTSTAID
TTKSLLVEFHETDLAEVKPENITVKDAGNAVAGTVTALDGSTNKFVFTPSQBLKAGT
VTSVTIDGVRDKVGNTISKYITSFKTVSANPTLSSISIADGAVNVDRSKTITIEFSDS
VPNPTITLKKADGTSFTNYTLNVNNENKTYKLVFHKCVTLDEFTQYELAVSKDFQTG
TDIDSKVFFITGSVATDEVKFLVGVGSWNGTSYTQDAAATRLRSVADFVAEPVALQF
SEGIDLTNATVTVTNTDDKTVEVISKESVDADHDAGATKETLVINTVTPLVLDNSKT
YKIVVSGVKDAAGNVADTITFYIK"
                                                                                                                                                                                                                                                                                                                                                                                          . 0%;
                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                   Score 3687;
Pred. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                              layer
                                                                                                                                                                                                                                                                                                                                                                                         3687;
No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                1042
                                                                                                                                                                                                                                                                                                                                                                                                                                H
                                                                                                                                                                                                                                                                                                                                                                                                  DΒ
                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                   696
                                                                 660
                                                                               636
                                                                                              600
                                                                                                                         540
                                                                                                                                         516
                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                          216
                     756
                                    720
                                                                                                             576
                                                                                                                                                        480
                                                                                                                                                                       456
                                                                                                                                                                                                    396
                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                 336
                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                              276
                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                      96
                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                   0
뮍
         Qγ
                            В
                                      Ş
                                                      B &
                                                                                     Ъ
                                                                                                δõ
                                                                                                               뫄
                                                                                                                              δ
                                                                                                                                                밁
                                                                                                                                                           Qy
                                                                                                                                                                            밁
                                                                                                                                                                                         QΥ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                  β
δ
                                                                                                                                                                                                                                                                                                 ρ
γ
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                          1417
              1801
                                                                                                                                  1561
                                                                                                                                                1537
                                                                                                                                                               1501
                                                                                                                                                                                           1441
                                                                                                                                                                                                                                        1357
                                                                                                                                                                                                                                                                                                  1237
                                                                                                                                                                                                                                                                                                                               1177
                                                                                                                                                                                                                                                                                                                                             1141
                                                                                        1657
                                                                                                                    1597
                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                          1057
                                                                                                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                     1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               817
                                                                                                                                                                                                                                                                                                                                                                                                                        997
                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                     937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             757
ttaggcactgttaacgagaaaacatatgagttcaaaactcaagacttaactgctcctaca
                            gctggaacttattatcctggtcttcaattcacaacaacgtttgctactaagttagacgaa
                                                                                                                                               gacgatactttaacagtagtatttgataagttgttagcacctgaaactgtaaacagctcg
                                                                                                                                                                                                                                                                                                                                      tttggaactaatgtaacaaacacttctgtaaacttagcagcaggtactttcgacact
                                                                                                                                                                                                                                                                                                                                                             GAATTTAAAGAAGATGCATTCACTTTCAAGCTTCGAAATGATGCTGTAGTTACTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                    gaatttaaagaagatgcattcactttcaagcttcgaaatgatgctgtagttactcaagtg
                                                                                                                                                                                                                                                                                                                                                                                          GCTGGAACTTATTATCCTGGTCTTCAATTCACAACAACGTTTGCTACTAAGTTAGACGAA
                                                                                                                                                                                                                                                                                                 GACGATACTTTAACAGTAGTATTTGATAAGTTGTTAGCACCTGAAACTGTAAACAGCTCG
                                                                                                                                                                                                                                                                                                                               TTTGGAACTAATGTAACAAACAACACTTCTGTAAACTTAGCAGCAGGTACTTTCGACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCAAAACTGAACTAACAGAAGTAGCGAAAAAAAGCATTAGATGCAGATGAAGCTGCGCTT
```

1476

1440

1500

1536

1416

1380 1356 1320 1260

1236 1200

1296

1140 1116 1056 1020 960 936 876 840 816

1080

1776

1740 1716 1680 1656 1620 1596 1560

1800

0y 0y 0y

g dg

νQ

ф

80 PB

Qy В δÃ ₽ Qy

```
Оy
           P Q
                                                                                                                  P Q
                                                                                                                                  04
04
09
                                                                                                                                                                            24
24
25
26
27
                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                            δõ
                                                                                                                    2437
                                                                                                                                                                              2197
                                                                  2641
                                                                                        2557
                                                                                               2521
                                                                                                       2497
                                                                                                                            2401
                                                                                                                                           2341
                                                                                                                                                  2317
                                                                                                                                                                2257
                                                                                                                                                                       2221
                                                                                                                                                                                      2161
                                                                                                                                                                                             2137
                                                                                                                                                                                                    2101
                                                                                                                                                                                                            2077
                                                                                                                                                                                                                   2041
                                                                                                                                                                                                                          2017
                                                                                                                                                                                                                                 1981
                                                                                                                                                                                                                                         1957
                                                                                                                                                                                                                                                1921
                                                                                                                                                                                                                                                       1897
                                           gtattcactccatctcaagaattaaaagctggtacagtttactctgtaacaattgacggt
              gtgaaagttgctgctaaccaattagaacgtaaccaagggtacaaattagtagtgttcggt
                                                                                                                                                                                                           GTATTCACTCCATCTCAAGAATTAAAAGCTGGTACAGTTTACTCTGTAACAATTGACGGT
                                                                         ggcaaagtaactgtcgagaanttaacaaacaacggatgggtagatgctggtactggaaca
                                                                                                                                                                                             GTGAAAGTTGCTGCTAACCAATTAGAACGTAACCAAGGGTACAAATTAGTAGTGTTCGGT
                                                                                                                     GGCAAAGTAACTGTCGAGAAATTAACAAACAACGGATGGGTAGATGCTGGTACTGGAACA
2976
              2916
                             2856
                                           2796
                                                   2760
                                                          2736
                                                                                               2580
                                                                                                      2556
                                                                                                                     2496
                                                                                                                            2460
                                                                                                                                          2400
                                                                                                                                                 2376
                                                                                                                                                         2340
                                                                                                                                                                2316
                                                                                                                                                                              2256
                                                                                                                                                                                     2220
                                                                                                                                                                                             2196
                                                                                                                                                                                                   2160
                                                                                                                                                                                                            2136
                                                                                                                                                                                                                  2100
                                                                                                                                                                                                                                 2040
                                                                                                                                                                                                                                         2016
                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                       1956
                                                                                                                                                                                                                                                              1920
                                                                 2700
                                                                         2676
                                                                                2640
                                                                                        2616
                                                                                                             2520
                                                                                                                                   2436
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                  RESULT
AF055578
LOCUS
                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                       γQ
                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                    94
                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DP
QA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΩV
                                                                                                                                                                          밁
                                                                                                                                                                                   Qγ
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                日
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                   SOURCE
                                                                                           KEYWORDS
                                                                                                                           DEFINITION
JOURNAL
MEDLINE
PUBMED
                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3037
                                                                                                                                                                          3697
                                                                                                                                                                                       3661
                                                                                                                                                                                                     3637
                                                                                                                                                                                                                     3601
                                                                                                                                                                                                                                     3577
                                                                                                                                                                                                                                                    3541
                                                                                                                                                                                                                                                                   3517
                                                                                                                                                                                                                                                                                 3481
                                                                                                                                                                                                                                                                                                 3457
                                                                                                                                                                                                                                                                                                               3421
                                                                                                                                                                                                                                                                                                                               3397
                                                                                                                                                                                                                                                                                                                                             3361
                                                                                                                                                                                                                                                                                                                                                            3337
                                                                                                                                                                                                                                                                                                                                                                           3301
                                                                                                                                                                                                                                                                                                                                                                                          3277
                                                                                                                                                                                                                                                                                                                                                                                                        3241
                                                                                                                                                                                                                                                                                                                                                                                                                       3217
                                                                                                                                                                                                                                                                                                                                                                                                                                       3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2941
                                                                                                                                                                        ccagttgcccttcaattctcagaaggtatcgatttaacgaatgcaactgtgacagtaaca
                                                                                                                                                                                                                                                                                                                                                                                          aacagcaagacttataagattgttgtaagtggagttaaagatgcagcaggtaatgttgca
                                                                                                                                                                                                                                    gatgcaggtgctactaaggagacattagtaattaacacagttactcctttagtacttgat
                                                                                                                                                                                                                                                                 agctatactcaggatgctgcagcaacacgacttcggtctgtagctgacttcgttgcggag
                     l (bases 1 to 3680)

Jarosch, M., Egelseer, E.M., M.
S-layer gene sbsC of Bacillus
molecular characterization at
Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                   tctgttgctactgacgaagtaaaacctgctctagtaggcgttggttcatggaatggaaca
                                                                                                                                                                                                       AACAGCAAGACTTATAAGATTGTTGTAAGTGGAGTTAAAGATGCAGCAGGTAATGTTGCA
                                                                                                                                                                                                                                                                                                                                                            "ICTGTTGCTACTGACGAAGTAAAACCTGCTCTAGTAGGCGTTGGTTCATGGAATGGAACA
Microbiology
20170659
10708365
                                                                                                  Bacillus
gene, com
AF055578
AF055578.
                                                          Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium
Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                  AF055578
                                                                                                                  complete
                                                                                                    i
                                                                                                                          3680 bp DNA stearothermophilus
                146
                (Pt
               2),
                273-281
                                                                                                                                                                         3723
                                      lus
                                             Mattanovich, D.,
                                                                                                                           surface
                                      ttanovich, D., Sleytr, U.B. and S
stearothermophilus ATCC 12980:
                              heterologous
                                                                                                                           layer
                                                                                                                          protein
                                                                    group;
                              expression
                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3216
                                                                                                                                                                                                       3696
                                                                                                                                                                                                                      3660
                                                                                                                                                                                                                                                                  3576
                                                                                                                                                                                                                                                                                 3540
                                                                                                                                                                                                                                                                                                 3516
                                                                                                                                                                                                                                                                                                               3480
                                                                                                                                                                                                                                                                                                                                                                           3360
                                                                                                                                                                                                                                                                                                                                                                                                                                       3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3036
                                                                                                                                                                                                                                     3636
```

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REMARK
COMMENT
                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                               Query Match
Best Local Similarity
Matches 767; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                         terminator
                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
1 atggataggaaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcattt 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 (bases 1 to 3680)
Jarosch, M., Egelseer, E.M., Mattanovich, D.,
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (25-MAR-1998) Zentrum fuer Ultrastrukturforschung,
Submitted (45-MAR-1998) Zentrum fuer Ultrastrukturforschung,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence update by submitter on Apr 13, 1999 this sequence version replaced gi:3025825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vienna, Austria
3 (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 273 to 3572)
Jarosch, M., Egelseer, E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vienna, Austria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Universitaet fuer Bodenkultur, Gregor Mendelstrasse 33,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (13-APR-1999) Zentrum fuer Ultrastrukturforschung
                                                                                                                                    /gene="sbsC"
/product="surface 1
3606. 3643
/gene="sbsC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="sbsC"
/note="altern
255...261
                                                                                                                                                                                                                                                                                                                      VTSGLKDTAGKEFETSTNEFTYNKPVPASITFNFNKLPEDSAVDLTKYVTVKDAAGNV
IKSGFELEFTSSEKLTGGKFINTTGKKSVIVNATVKGTNVTTGKVILAVEDEKAEVS
ELKLTKDNKEVVTLYARGNAFDKDGHOLISSGLTLTLTAKFKDOYGNELTGKVAGTDYES
ELKLTKDNKEVVTLYARGNAFDKDGHOLISSGLTLTLTAKFKDOYGNELTGKVAGTDYSTGVS
VAKGOKATFKVTLKDOYGNKFTGNVNVTSDKTETATVSVSNGGLTGQSEYTVTVNGVAE
GSTTITIKSGTKEVKVPUNVAGGFVANYQIKYLDDGKIDKSAFESPANDVQLKVX
VDANGNIVGDITNDVTITSEATDTNGVIVNASKSTANGDTVYVITDNGSKKVGKETLT
                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MDKKKAVKLATASAVAASAFVAANPHASQAATDVATVVSQAKAQ KEAYYTYSHTVTETGQFDLKDVYAAYNKAKQAYANAVAVVNKAGGAKKDAYLADIQ AIYETYVFKANPKSGEARVATIXDIXDAYKAKQAYANAVAVVNKAGGAKKDAYLADIQ AIYETYVFKANPKSGEARVATIXDAYNYATKLDKMQELKAAVDAKDLKKAEELYKKI SYELKTRTVILDRYYGSTRELLRSTFKADAQALRDRLIYDITVAMKAREAQDAVKAG NLDKAKAALDQVNQYVSKVTDAFKAELQKAAQDAKAAYEAALTFKYESYSAIDSTSFK VTFTKRVDKATAIPKNESSITLKGTETKLYYPKSVEVSESGLTATVTLYDTLYDGKTYTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene-
273. .:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene=
273. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="sbsC"
51. .3643
                                                                                                                                                                                                     TGIQIGTKSAS*
363. .3569
                                                                                                                                                                                                                                                                           VKLGTYTLGTYDVEYIDTTLKATYYTKKADLIELDAADNGDALAKLLANLDIKDQNGN
PMYDSAATPNTNEKLQALKSYLSGIYSSDTSYIGSYSNYDNLKDDASISGLAYKKAGT
VTLTLVFNEDSKIAPIAITYKAPAATQDGYTYTGLDLYPGYTGYGKTKFTATDKIKSG
                                                                                                                                                                                                                                AAAAPVKGIAYTDTTVRTTYGTEVTSGTVEVDAQDGQHISIIEVDENGKVVGYKDYTI
                                                                                                                                                                                                                                               HKLYYAVDDSAVPAPAVGTTRNSTKFANEITVGTTEVAANAGQIITVIEVDSSDRVYG
YKTFTVEAADLSVAADKTGFTATVTPTGGNQVTTGKTLLAVSDLANGHKLYAAAAGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="surface layer protein precursor"
/protein_id="AAC12757.1"
/db_xref="GI:3025826"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism-"Bacillus stearothermophilus"
/strain-"ATCC12980"
/db_xref-"taxon:1422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="sbsC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="sbsC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="ATCC:12980"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="S-layer protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Egelseer, E.M., Mattanovich, D., Sleytr, U.B. and Sara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .3643
                                             13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .3572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "alternative transcription start site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sbsc"
                                                                                                                           O
                               0;
                               Score 513; DB 1;
Pred. No. 7.7e-79;
0; Mismatches 375;
                                                                                                                           766
                                                                                                                        g
                                                                                                                                                                    layer protein'
                                                                                                                         955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sbsc*
                                                            Length 3680;
                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sleytr, U.B. and Sara
                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A-1180
                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                              2,
              Š
                                             밁
                                                                        Ş
                                                                                                        멍
                                                                                                                                   δô
                                                                                                                                                                   뫄
                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                        δō
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
               1081
                                             1287
                                                                                                                                                                    1173
                                                                                                                                                                                                                               1113
                                                                                                                                                                                                                                                                                            1053
                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                     993
                                                                                                                                                                                                                                                                                                                                                                                                                933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      453
                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
```

ø

```
gaatttaaagaagatgcattcactttcaagcttcgaaatgatgctgtagttactcaagtg
                                                                ---TTAAAAGATACAGCTGGTAAAGAATTTGAAACTAGCACAAACGAATTCACTTACAAC
                                                                                                                                                                            acggcagatgtttctttatctacagacggaaaaactatcactgtggatgcttcaactcca
                                                                                                                                                                                                                                                                                                                                                           gcagtaccagtgaacggaacactaaaattacaactttcagctgctgcaaatgaagataca 900
                                                                                                                                                                                                                                                                                                                                                                                                                                     actocaaaagttgaaagtgtaagttgogattaacactcaaaacaaagctgttgaattaaca 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtagcaacttacatcgatgcttacaactatgcaacaaaattagacgaaaatgcgccaagag 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtcgctgcaaatccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaa 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ttcgaaaataatacggagtataaagtagttaaaaggtattaaagacaaaaatggcaaa
                                                                                                                                                      GTAACTCTTTATGATACATTAGTAGACGGTAAAACTTACACTGTTGTAACATCTGGT---
                                                                                                                                                                                                                                         GAAA----CTAAACTTTATCCTAAGTCTGTTGAAGTATCTGAGAGTGGATTAACTGCTACT
                                                                                                                                                                                                                                                                               gtaaacgtaaatactgtacgtatctataaagtggacggtaacattccatttgcccttaat
                                                                                                                                                                                                                                                                                                                              AAGCCTGTAGACAAAGCAACAGCAATTCCTAAAAAACTTCTCTATTACTTTAAAAAGGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCAAAGCCGAACTGCAAAAAGCAGCACAAGACGCCCAAGGCGGCGTATGAAGCAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ttcaaaactgaactaacagaagtagcgaaaaaagcattagatgcagatgaagctgcgctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACAAAGCGAAAGCCGCGCTTGACCAAGTCAACCAATACGTATCGAAAGTAACCGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gacaaagctaaagctgctgttgatcaaatcaatcaatacttaccaaaagtaacagatgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACATCACCGTTGCCATGAAAGCGCGTGAAGCGCAAGACGCTGTCAAAGCCGGCAACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gatattaccgttgcaatgaaagcgcgcgaagtacaagacgctgtgaaagcaggcaattta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccttatgaaattaaaactcgcacagtcattttagatcgcgtatatggtaaaacaactcgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCANAGCAGCCGTCGATGCGANAGATCTGANAAAAGCAGAAGAGCTCTACCACAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGCTACGTACATCGACGCTTACAACTATGCGACAAAATTAGACAAAATGCGCCCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGCAAGCTATATACGAAACGTATGTATTCAAAGCCAACCCGAAATCGGGCGAAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttacaaaaagaatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACGCGGTTGCTGTGAACAAAGCCGGCGGCGCGAAAAAAGACGCGTATTTGGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGCAGCCAACCCGCATGCTTCCCAAGCAGCAACGGACGTGGCGACGGTCGTCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                 ACGCCGAAGGTTGAGAGTGTAAGTGCGATTGACTCTACAAGCTTCAAAGTTACATTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1286
                                                                                                                                                                                                                                         1229
                                                                   1343
                                                                                                             1080
                                                                                                                                                                                              1020
                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                 1112
                                                                                                                                                                                                                                                                                                                              1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
```

Ş

밁

밁

0;

```
REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
AF228338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1404
                               sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
 terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTTGACTAA 1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tttggaactaa 1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCCAGTACCAGCTTCTATTACATTCAACTTCAATAAGTTACCTGAAGATAGTGCAGTT 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Danhorn, T. Egelseer, E.M., Idris, R., Sleytr, U.B. and Sara, M. Direct Submission
Submitted (14-JUL-2000) Zentrum fuer Ultrastrukturforschung, Universitaet fuer Bodenkultur, Gregor Mendel-Strasse, Vienna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF228338
Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Danhorn, T., Egelseer, E.M., Idris, R., Sleytr, U.B. and Sara, M. Molecular characterization of the first bacterial S-layer glycoprotein SbsD from a temperature derived mutant of Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus stearothermophilus.
Bacillus stearothermophilus
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence update by submitter
On Jul 14, 2000 this sequence version replaced
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (24-JAN-2000) Zentrum fuer Ultrastrukturfor: Universitaet fuer Bodenkultur, Gregor Mendel-Strasse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A-1190, Austria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Danhorn, T., Egelseer, E.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stearothermophilus ATCC 12980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF228338
AF228338.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A-1190, Austria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 3090)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 3090)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 3090)
                             TRALDSSYDMGVRADMINELVPATTONLDASALMISMENT INGLAVITAVEDGDIKH
IRVTLAPGANTWTGTHVITISMIKNTSGLVMDTVTVSEEMKENVAPTETATLTSADVI
RVDFSEEVANATISSELSANNETVKVDGNVYTVSNVYEDNNATNOQGGTGYKTYYLK
LOSPYSDLSKPITLSATGIVDVDQTGAITMNNLVGNNVSNAVVNVAK*
273. 362
                                                                                                                                                                       /translation-"MDKKKAVKLATASAVAASAFVAANPHASQAATDVATVVSQAKAQ
MKEAYYTYSHTVETGKIPHISDVYAAYNKAKQAYANAVAVKAKGAKKDAYLADIQ
ATYETYVFKANPKSGEAKPAIT IDDVYAAYNKAKQAYANAVAVKKAGGAKKDAYLADIQ
SYELKTRTVILDRVYGQSTRELLRSTFKADAQALRDSLIYDITVAMKAREAQHAKG
KLDKAKAALDQVNQYVSKVTDAFKAELQKAAQDANAAYEALLPKVBSVTAVNAKTLE
IKFNKAVDVATVIDNKGTSDTSDDVVKATAITITAIDGQGSVSTVKASLSDDKKTLKL
VADGSQFFKKYVVDIKNKYTLDGKDVPSYTTTIDTTDSVRFSVLSSSYADNGLTLKIFGAVD
KFSEPLASVCTVKLYDGTTEISVSPKTTAGDDEMTINLASSSVPVNKDLTLKIFGAVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3090 bp DNA stearothermophilus
                                                                                                                          YNGNVINPNPÄELTVKKTTVDTTKPTVQNIEAVNTKTVKVTFSEKLLSNPTIKIGGQT
ASVSVDSTGLVYTATLANALSEGVYAVEVSDYKDLAGNAGDTYTKVVQLKADTTAPKF
VSSQVVKIDGVEHLVLTEDEEVTTGSNITVVQASDKYVDENNVLKSVGTTLTTTSDNF
                                                                                                                                                                                                                                                                                                                                                                                                                    /gene=
273. .:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bacillus stearothermophilus"
/db_xxef="taxon:1422"
255. .261
                                                                                                                                                                                                                                                                                                       /product="SbsD precursor"
/protein_id="AAF34763.2"
/db_xref="GI;9188639"
 /gene="sbsD"
3010. .3050
                                                                                                           KLYLPTDGKSKSVALNISSLPKGTYTVTLPDRLVSDLAGNPYAERKQITFVRGSDSLT
                                                                                                                                                                                                                                                                                                                                                                                                   /gene-"sbsD"
                                                                                                                                                                                                                                                                                                                                                     transl_table=11
                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                      'note="surface layer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:9188638
                                                                                                                                                                                                                                                                                                                                                                                                                      .2984
                                                                                                                                                                                                                                                                                                                                                                                                                                     sbsD*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zentrum fuer Ultrastrukturforschung,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Idris, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SbsD
                                                                                                                                                                                                                                                                                                                                                                                   glycoprotein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sleytr,U.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (sbsD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gi:6984125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sara, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vienna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete
RESULT
E10125
ID E1
XX
AC E1
XX
SV E1
                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                E10125.1
                                                                                                                                                           1053
                                                E10125;
                                                                             E10125
                                                                                                                                                                                                                          993
                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                         933
                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                       873
                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                    813
                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
```

```
Query Match
Best Local
                   781 actccaaaagttgaaagtgtaagtgcgattaacactcaaaacaaagctgttgaattaa 838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l atggataggaaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcattt 60
                                                                                                                                                                                                                                                                                                                     ttcaaaactgaactaacagaagtagcgaaaaaagcattagatgcagatgaagctgcgctt 780
                                                                                                                                                                                    gacaaagctaaagctgctgttgatcaaatcaatcaatacttaccaaaagtaacagatgct 720
                                                                                                                                                                                                                                                                                                                                                                                                                             ccttatgaaattaaaactcgcacagtcattttagatcgcgtatatggtaaaacaactcgt 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtagcaacttacatcgatgcttacaactatgcaacaaattagacgaaatgcgccaagag 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ttacaaaaagaatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgt 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtcgctgcaaatccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaa 120
CCTCCAAAAGTGGAAAGTGTAACAGCCGTTAACGCCAAAACGTTGGAAATCAAATTCA 1110
                                                                                                                                                               GACAAAGCGAAAGCCGCGCTTGACCAAGTCAACCAATATGTATCGAAAGTAACCGATGCG 992
                                                                                                                                                                                                                                               GACATCACTGTTGCCATGAAAGCGCGTGAAGCGCAAGACGCCGCCAAAGCCGGCAACCTG 932
                                                                                                                                                                                                                                                                  gatattaccgttgcaatgaaagcgcgcgcgaagtacaagacgctgtgaaagcaggcaattta 660
                                                                                                                                                                                                                                                                                                                                                                                                            TCGTATGAGCTCAAAACGCGCACGGTCATTCTCGACCGCGTCTACGGCCAATCGACGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctagaggctgctgttcaagcaaaagatttagaaaaagcagaacaatactatcacaaaatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACGCGGTCGCTGTCGTGAACAAAGCCGGCGGCGCGAAAAAAAGACGCGTATTTGGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaattcccaaacattaacgatgtatatgctgaatacaacaaagcgaaaaaacgataccgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGCCGCCAACCCGCACGCTTCCCCAAGCAGCAACGGACGTGGCGACGGTCGTCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAAAGCAGCCGTCGAAGCGAAAGATCTGAAAAAAGCAGAAGAGCTCTACCACAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGCAACGTACATTGACGCTTACAACTATGCGACAAAATTAGACGCGATGCGTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCAAGCTACATACGAAACGTATGTATTCAAAGCCAACCCGAAATCGGGCGAAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ANACTCCCGAACATCAGTGACGTATACGCCGCCTACAACAAGGCGAAACAAGCGTATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches 219;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    487.6; DB 2
No. 1.8e-74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                          812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       332
```

standard;

RNA;

UNC;

2069

₽₽

```
Ş
                           ₽
                                         Ş
                                                         뫄
                                                                      Qy
                                                                                      В
                                                                                                    δÃ
                                                                                                                       В
                                                                                                                                    Š
                                                                                                                                                      밁
                                                                                                                                                                                                                            Ş
                                                                                                                                                                                   Query Match
Best Local S
Matches 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                *GENE CLONE MANIFESTING CHICKEN LEUCOCYTOZOON IMMUNOGENIC RECCOMBINANT VACCINE AGAINST CHICKEN LEUCOCYTOZOON*; Patent number JP1995284392-A/1, 31-OCT-1995.

DOUBUTSUYOU SEIBUTSUGAKUTEKI SEIZAI KYOKAI, KITASATO INST:
                           1,155
                                                                                        1035
                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [1]
1-2069
                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       дþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-OCT-1997
02-SEP-2000
                                                                                                                       975
                                                                                                                                                      915
             384
                                           324
                                                                         264
                                                                                                        204
                                                                                                                                      144
                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1995284392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoding
    caactatgcaacaaaattagacgaaatgcgccaagagctagaggctgctgttcaagcaaa
                          TGAAGAAGAAAAGAAGAAGTAACACATGAAGAAGAAAAAAGAAGAAGTAACACATGAAGA
                                                                 agcaggtggcgcgaaaaagacgcttacttagctgatttacaaaaagaatatgaaactta
                                                                                                   atatgctgaatacaacaaagcgaaaaaaacgataccgtgatgcggtagcattagtgaataa
                                                                                                                                    atactatacttacagccatacagtaacggaaactggtgaattcccaaacattaacgatgt
                                                                                                                                                             tgaagcggctacagatgtagcaacagtagtaagccaagcaaaagcacagttcaaaaaaagc
                                                                                                                                                                                                                                                                                                                                                                            strandedness:
topology: Line
                                                                                                                                                                                                                                                                                                                                                                                            DOI HIROHITO, NAGAKUCHI YOSHIO, C12N15/09, A61K39/015, C12P21/02;
                                                         AGAAGTAATACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAGAAGAAAAAGT
                                                                                                                      AATACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAAAAGAAAAAGAAGAGCATGA
                                                                                                                                                    TGAAGAAGAAAAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGT
                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                               misc_
                                                                                                                                                                                     436;
                                                                                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                                                                    31-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                            Leucocytozon caulleryi
JP 1995284392-A/1
                                                                                                                                                                                                                                                                                                                                                                                                           .9-APR-1994 JP 1994080643
                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                           1995284392-A/1
                                                                                                                                                                                                                            2069
                                                                                                                                                                                                                                                                                                                                feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel.
                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>}</u>
                                                                                                                                                                                                                            BP;
                                                                                                                                                                                                                                                                                                                                                                              Linear;
                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunogenicity protein
                                                                                                                                                                                                                                          /db_xref="taxon:32644"
/organism="unidentified"
                                                                                                                                                                                                                            1216 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65,
                                                                                                                                                                                                                                                                                                                                                                                     Double;
                                                                                                                                                                                                                                                                                               /note="EcoRI adaptor"
2045..2069
/note="EcoRI adaptor"
25..2046
                                                                                                                                                                                           2.18;
                                                                                                                                                                                                                                                                                                                               /organism="Leucocytozon
/strain="shizuoka"
1. .25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last upda
                                                                                                                                                                                                                                                                                        /product="immunogenicity
                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      updated,
                                                                                                                                                                                   0;
                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                           C; 443 G;
                                                                                                                                                                                    Mismatches
                                                                                                                                                                                            77.4;
No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                     TANAKA
                                                                                                                                                                                                                           243
                                                                                                                                                                                            .00071
                                                                                                                                                                                                   В
                                                                                                                                                                                   576;
                                                                                                                                                                                                                            ₽.
                                                                                                                                                                                                                                                                                                                                                                                                    YOSHIO,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                   45;
                                                                                                                                                                                                                                                                                                                                              caulleryi"
                                                                                                                                                                                                                                                                                        protein"
                                                                                                                                                                                                                            0
                                                                                                                                                                                                                            other;
                                                                                                                                                                                    Indels
                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                     FUJISAKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                   INST: THE
                                                                                                                                                                                                    2069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN
                                                                                                                                                                                   Ψ
                                                                                                                                                                                   Gaps
                          1214
                                                                                       1094
                                                                                                                                                                    143
                                                                                                                      1034
                                                                        323
                                                                                                                                     203
                                         383
                                                                                                      263
                                                                                                                                                     974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENE
                                                                                                                                                                                   ۲,
                                                                                                                                                                                  RESULT
E10126
ID E
    Qγ
                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                 δδ
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
[1]
1-3399
Doi H., Nagakuchi Y., Tanaka Y., Fujisaki Y.;
Boi H., Nagakuchi Y., Tanaka Y., Fujisaki Y.;
"GENE CLONE MANIFESTING CHICKEN LEUCOCYTOZOON IMMUNOGENIC RECCOMBINANT VACCINE AGAINST CHICKEN LEUCOCYTOZOON";
Patent number JP1995284392-A/2, 31-OCT-1995.
DOUBUTSUYOU SEIBUTSUGAKUTEKI SEIZAI KYOKAI, KITASATO INST:
                                                                unidentified unclassified
                                                                                                                                                                                                                                          1044
                                                                                                                                                                                                                                                          1812
                                                                                                                                                                                                                                                                                        1752
                                                                                                                                                                                                                                                                                                                                                                                    1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1215
                                                                                                                                     08-OCT-1997
                                                                                                                                                    E10126
                                                                                                                                                                    E10126
                                                                                                                                                                                   E10126
                                                                                                                                                                                                                           1872
                                                                                                                                                                                                                                                                                                                        1692
                                                                                                                                                                                                                                                                                                                                                                                                                   1515
                                                                                                                            02-SEP-2000
                                                                                                                                                                                                                                                                                                                                                     1632
                                                                                                                                                                                                                                                                                                        924
                                                                                                                                                                                                                                                                                                                                                                                                    744
                                                                                                                                                                                                                                                                                                                                                                                                                                   684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             444
                                                                                                                                                                                                  8
```

```
DNA encoding an maltose-binding
JP 1995284392-A/2
                                                                                                                                                                                                                                                                                                                                                      AAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAATGTA
                                                                                                                                                                                                                                                                                                                                                                               AGAAGAAGAAATGTAACATATGAAGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              agacggaaaaactatcactgtggatgcttcaactccattcgaaaataatacggagtataa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctataaagtggacggtaacattccatttgcccttaatacggcagatgtttctttatctac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aaaattacaactttcagctgctgcaaatgaagatacagtaaacgtaaatactgtacgtat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgcgattaacactcaaaacaaagctgttgaattaacagcagtaccagtgaacggaacact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agogaaaaaagoattagatgoagatgaagotgogottactocaaaagttgaaagtgtaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTAACACATGAAGAAGAAGAAAAAGTAATACATG----AAGAAGAAGAAAAAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tcaaatcaatcaatacttaccaaaagtaacagatgctttcaaaactgaactaacagaagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gcgcgaagtacaagacgctgtgaaagcaggcaatttagacaaagctaaagctgctgttga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAAGTAACATATGAAGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcaaaagcacaagaacttcgcgacagcttaatttatgatattaccgttgcaatgaaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agtcattttagatcgcgtatatggtaaaaccaactcgtgatttacttcgctctacatttaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAAAAGAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agatttagaaaaagcagaacaatactatcacaaaattccttatgaaattaaaactcgcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAAAAGAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard; DNA; UNC;
                                                                                                  (Rel.
                                      protein
                                                       immunogenicity protein of Leucocytozon
                                                                                                52,
65,
                                                                                                  Created)
Last upda
                                                                                                  updated,
                                                                                                                                                                                                                                                 3399
                                                                                                  Version
                                                                                                                                                                                                                                                 ΒP
                                                                                                  ۵
                                                           caulleryi
                                                                                                                                                                                                                                                                                                                                                                                              1098
                                                           fused
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1394
                                                                                                                                                                                                                                                                                                                                                                                                                                           1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                503
                                                           6
```

KITASATO INST:THE

PROTEIN

AND

GENE

```
ργ
Вb
                  Ş
                                     밁
                                                   γ
                                                                        В
                                                                                          Ş
                                                                                                             В
                                                                                                                                                В
                                                                                                                                                                Qy
                                                                                                                                                                                    뮹
                                                                                                                                                                                                    Q
                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 436
 2484
                                      2424
                                                                          2364
                                                                                                                                                 2244
                                                                                                              2304
                                                                                                                                                                                                                         2124
                                                                                                                                                                                                                                                                                                                                                                                                                    2184
                                                                                                                                                                                                                                                             2064
                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                 source
                                                       444
                                                                                                                                324
                                                                                                                                                                                                       204
                                                                                                                                                                                                                                           144
                                                                                                                                                                                                                                                                              84
 agtcatttagatcgcgtatatggtaaaacaactcgtgatttacttcgctctacatttaa
                                               agatttagaaaaagcagaacaatactatcacaaaaattccttatgaaattaaaactcgcac
                                                                                    caactatgcaacaaaattagacgaaatgcgccaagagctagaggctgctgttcaagcaaa
                                                                                                                                                            agcaggtggcgcaaaaaagacgcttacttagctgatttacaaaaaagaatatgaaactta
                                                                                                                                                                                                                                                                             tgaagcggctacagatgtagcaacagtagtaagccaagcaaaagcacagttcaaaaaaagc 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                None
Artificial
                                                                         AGAAAAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAAA
                                                                                                             TGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAAAAAGAAGAAGTAACACATGAAGA
                                                                                                                            cgttttcaaagcaaaccctaaatctggcgaagctcgtgtagcaacttacatcgatgctta
                                                                                                                                                                                     atatgotgaatacaacaaagogaaaaaacgataccgtgatgcggtagcattagtgaataa
                                                                                                                                                                                                                       AATACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAAAAAGAAAAAGAAGAAGCATGA
                                                                                                                                                                                                                                         atactatacttacagccatacagtaacggaaactggtgaattcccaaacattaacgatgt
                                                                                                                                                                                                                                                             TGAAGAAGAAAAAAAGAAGTAACACATGAAGAAATAGAAAAAAGAAGCATGAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOI HIROHITO, NAGAKUCHI YOSHIO, C12N15/09, A61K39/015, C12P21/02;
                                                                                                                                                 AACACATGAAGAAGAAGAAAAAAGTAATACATGAAGAAGAAAAAAGAAGAAGTAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            strandedness: Double;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JP 1995284392-A/2
31-OCT-1995
19-APR-1994 JP 1994080643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Key
                                                                                                                                                                                                                                                                                                al Similarity
436; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   topology: Linear;
                                                                                                                                                                                                                                                                                                                                             3399
                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                            B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequences.
                                                                                                                                                                                                                                                                                                                                                              /organism="unidentified"
                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                      db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                            1577 A;
                                                                                                                                                                                                                                                                                                        2.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"EcoRI adaptor"
1174 3195
                                                                                                                                                                                                                                                                                                                                                                                                                           /note="EcoRI adaptor" 3219. .3399
                                                                                                                                                                                                                                                                                                                                                                                                                                            1174. .3195
/note="immunogenicity
3194. .3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="maltose-binding 1150. .1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                  3219. .3399
/note-"sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunogenicity protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Artificial sequences|
1. .3399
                                                                                                                                                                                                                                                                                                                                            509 C; 797 G;
                                                                                                                                                                                                                                                                                             Score 77.4; DE Pred. No. 0.000 0; Mismatches
                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                    derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TANAKA YOSHIO,
                                                                                                                                                                                                                                                                                                    ).00067;
                                                                                                                                                                                                                                                                                                                                            516
                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein"
                                                                                                                                                                                                                                                                                               576;
                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein"
                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of maltose-binding
                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                   pMAL-c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUJISAKI
                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YUJIRO
                                                                                                                                                                                                                                                                                               Gaps
                                     2483
                                                                                          443
                                                                                                             2363
                                                                                                                                                                                    2243
                                                                                                                                                                                                                        2183
                                                                                                                                                                                                                                          203
                   563
                                                                        2423
                                                                                                                              383
                                                                                                                                                2303
                                                                                                                                                                   323
                                                                                                                                                                                                                                                            2123
                                                                                                                                                                                                       263
                                                                                                                                                                                                                                                                                               ۲.
```

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
AP002460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ဖ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aaaattacaactttcagctgctgcaaatgaagatacagtaaacgtaaatactgtacgtat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agtagtagttaaaggtattaaagacaaaaatggcaaagaatttaaagaagatgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agcgaaaaaagcattagatgcagatgaagctgcgcttactccaaaagtttgaaagtgtaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcgcgaagtacaagacgctgtgaaagcaggcaatttagacaaagctaaagctgctgttga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agcaaaagcacaagaacttcgcgacagcttaatttatgatattaccgttgcaatgaaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGAAGAAATGTAACATATGAAGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agacggaaaaactatcactgtggatgcttcaactccattcgaaaataatacggagtataa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACACATGAAGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctataaagtggacggtaacattccatttgcccttaatacggcagatgtttctttatctac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgcgattaacactcaaaacaaagctgttgaattaacagcagtaccagtgaacggaacact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTAACACATGAAGAAGAAGAAAAAGTAATACATG---AAGAAGAAGAAAAAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tcaaatcaatcaatacttaccaaaagtaacagatgctttcaaaaactgaactaacagaagt 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACATATGAAGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                    Structural A
             protein similarity are described as 'unknown protein'. The software programs used to predict genes include: (Informatics Group, Oak Ridge National Laboratory, http://compbio.ornl.gov/Grail-1.3/), GENSCAN (Chris Burge MTT L.
                                                                                               For the latest information on annotation of this clone, http://www.kazusa.or.jp/kaos/cgi-bin/agd_graph.cgi?c=FII Genes with similarity to proteins in the databases are c product, or note, qualifiers. Genes that have no sign
                                                                                                                                                                 Submitted (06-JUN-2000) Yasukazu Nakamura, Kazusa DNA Research Institute, Department of Plant Gene Research, 1532-3, Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:ynakamu@kazusa.or.jp, Tel:81-438-52-9935, Fax:81-438-52-9934) Address for correspondence: kaos@kazusa.or.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                      clone:F1D9
                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Embry
Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana (strain:Columbia) DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana
AP002460 BA000014
                                                                                                                                                                                                                                                                                                                                            Nakamura,Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AP002460.1 GI:8347620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AP002460
                                                                                                                                                                                                                                                                        Nakamura,Y
                                                                                                                                                                                                                                                                                                                                                                         Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                         (bases 1
                                                                                                                                                                                                                                                                                                                                                          (sites)
 ŝ
                                                                                                                                                                                                                                                                                                                         Analysis of Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111554 bp
                                                                                                                                                                                                                                                                                         ಕ
                                                                                                                                                                                                                                                                                         111554)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                       Embryophyta; Tracheophyta; Sidons; core eudicots; Rosidae;
http://CCR-081.mit.edu/GENSCAN.html),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NTA
                                                                                                                                                                                                                                                                                                                         Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone_lib:IGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-DEC-2000
BAC clone:F1D9
                                                                                                                      are described
                                                                                                   significant
                                                                                                                                                                                                                                                                                                                                                                                         Spermatophyta;
e: eurosids II;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1098
                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                     please
                                                                                                                                                                                                                                                                                                                                                                                                                                                           BAC
                                                                                                                                                                                                                                                                                                                         III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               623
                                                                                                                                                     see
                                                                                                                      in
```

Hebsgaard,

CDS	CDS	CDS	CDS	CDS	CDS	CDS	FEATURES SOUICE
/pseudo /pseudo /evidence=not_experimental complement(2507329379) /note="gene_id:FID9.7" /codon_start=1 /pseudo /evidence=not_experimental	/perudo /evidence=not_experimental /evidence=not_experimental join(2440424543,2465924879) /note="contains similarity to ATP-dependent CLPB protein gene_id:F1D9.6"	/coton_start=1 /pseudo /pseudo /evidence=not_experimental complement(2248923812) /note="contains similarity to retroelement pol polyprotein gene_id:F1D9.5" /codon_start=1	/db_xref="G1:8771574" /translation="MAKKERHKVVGVREEDVKRMLKLIMPYLNESLHQOLRALFSGYP /translation="MAKKERHKVVGVREEDVKRMLKLIMPYLNESLHQOLRALFSGYP STTLKITNYWKELEEMKHNTKODFIASERSSGFSTGAYIPMCAKIINKDFGKHGLAVL PGIKIITLETLVSKSSKLGIKDKLIIIIVVIVKLVMP" john(2181722004, 2207522143) /note="gontains similarity to ATP-dependent CLPB protein gene_id:F1D9.4"	/protein_id="BAA97091.1" /db_xref="G1:8777573" /translation="MIEGILHERVIAQDLDVESVADAIRCSKAGISDDNRPIASFMFM /translation="MIEGILHERVIAQDLDVESVADAIRCSKAGISDDNRPIASFMFM /translation="MIEGILHERVIAQDLDVESVADAIRCSKAGISDDNRPIASFMFM /translation="MIEGILHERVIAQDLDVESVARGENPHNVFSILLQLLD DGRITDSHGSLHTLIETITNNEDIKEAVYEMMKQOVVELARKTFKFKFKMRIDBYIVS QPLNSSVISKIVELQVVQMRQMKKRLEQPNNKLEITLNVLKGDFAENDTILLDADQPF NKLVIKKHENNAHYKQN" complement(join(1901819216,193171939,1960019746)) /note="contains similarity to unknown protein jb DAG97228.1 gene_id:F1D9.3" /codon_start=1 /evidence=not_experimental /protein_id="BaA97092.1"	/codon_start=1 /pseudo /evidence=not_experimental /product="helicase-like protein" /product="helicase-like protein" /join(1158) . 11736,11836 . 12019,12305 . 12497,1277412896, 1302113080) /note="gene_id:F1D9.2" /codon_start=1 /evidence=not_experimental /product="ATP-dependent CLPB protein-like"	/Strain="Columbia" /db_xref="taxon:3702" /chromosome="3" /chromosome="3" /clone="F1D9" /clone="1b="TGF BAC" /clone=1b="TGF BAC" /complement(join(47475195,52975754,58276284, 64576803,68647079,72167286,73267810,79148253, 83118737,90839347)) /note="gene_id:F1D9.1"	Denmark, http://www.cbs.dtu.dk/services/NetGene2/) and SplicePredictor (Volker Brendel, Stanford University, http://gremlinl.zool.iastate.edu/cgi-bin/sp.cgi). Genes encoding tRNAs are predicted by tRNAscan-SE (Sean Eddy, Washington University School of Medicine, St. Louis, http://genome.wustl.edu/eddy/tRNAscan-SE/). This sequence may not be the entire insert of this clone. It may be shorter because we remove overlaps between neighboring submissions. The 5' clone is TRN9 and the 3' clone is TRP9. Location/Qualifiers 1. 111554 /organism="Arabidopsis thaliana"
CDS	CDS	CDS		CDS CDS	CDS	CDS	CDS CDS
/note="gene_10:F1D9.15" /codon_start=1 /pseudo /evidence=not_experimental /product="retroelement pol complement(75178 76058) /note="gb AAD33008.1 gene_id:F1D9.16	/coon_start=1 /pseudo /pseudo /evidence=not_experimental complement(join(6870169 71526. 72709,728087330	SLCWALNEGTARGSAIGFHLDSLLKL KDMIOLKYLABEMOATSKGLEKVVQE ASLYSTYGGSADALALYFGBDPARVP AQKEAENEKLKKOVYNEN* complement(6652466974) /note="gbl AAD3008.1 gene_id:FID9.14 similar to unknown protein	gene_id:F1D9.13" /codon_start=1 /codon_start=1 /evidence=not_experimental /protein_id="BAB01984.1" /db_xref="GI:9294133" /translation="MLSKWKIPLPDLLKGFIGNKETLGRCEQFFLELLKVPR	codon_start=1 pseudo evidence=not_experin complement(join(58788 0276. 61922.61970. 0276. 61922.61970. rocte="gene_id:FID9.1 rocdon_start=1 pseudo evidence=not_experin product="maize trans complement(join(63866 complement(join(63866 complement) fote="contains simili" rocte="contains simili"	rt=1 .51234 .51234 .53715 .531,54627 .531,54627 .531,54627 .531,54627 .531,54627	gene_id:FlD9.9 strong similarity to unkno /codon_start=1 /pseudo /evidence=not_experimental join(4688947780,47984. /note="gene_id:FlD9.10 pir T01475 similar to unknown protein	/product="retroelement pol join(3009730190,30265. /note="gene_id:F1D9.8" /codon_start=1 /pseudo /evidence=not_experimental /product="ATP-dependent CL join(4063940982,41779. 4302043142,432264333 4373345198) /note="gb AAD25852.1

```
product="retroelement pol polyprotein-like"
join(3097, 3019),3025. 30551,30614. .31510,31758. .32035)
// note-"gene_id=FlD9.8"
// codon_start=1
// pseudo
// product="APP-dependent CLPB protein-like"
// codon_start=1
// pseudo
// pridence=not_experimental
// pseudo
// codon_start=1
// pseudo
// pseudo
// codon_start=1
// pseudo
// codon_start=1
// pseudo
// pseudonce=not_experimental
// pseudonce=not_experimental
// product="malze transposon MuDR protein-like"
// codon_start=1
// pseudonce=not_experimental
// pseudonce=not_experimental
// pseudonce=not_experimental
// pseudonce=not_experimental
// pseudon_start=1
// pse
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 314
110621 GAAGAAGAAGAAGAAGAAGAAGAAGAATCGTCACCACATAAATTGG
                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                       445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145
                                                                                                                                                                                                                                                                                                                                                                                                                                       385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85
                                                                                                                                                                                                gcgaaaaaagcattagatgcagatgaagctgcgcttactccaaaagttg
                                                                                   caaatcaatcaatacttaccaaaagtaacagatgctttcaaaaactgaactaacagaagta
                                                                                                                                                   cgcgaagtacaagacgctgtgaaagcaggcaatttagacaaagctaaagctgctgttgat
                                                                                                                                                                                                                                                                  gatttagaaaaagcagaacaatactatcacaaaattccttatgaaattaaaactcgcaca
                                                                                                                                                                                                                                                                                                                                                                                                                         aactatgcaacaaattagacgaaatgcgccaagagctagaggctgctgttcaagcaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gttttcaaagcaaaccctaaatctggcgaagctcgtgtagcaacttacatcgatgcttac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gcaggtggcgcgaaaaaagacgcttacttagctgatttacaaaaagaatatgaaacttac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tatgctgaatacaacaaagcgaaaaaacgataccgtgatgcggtagcattagtgaataaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tactatacttacagccatacagtaacggaaactggtgaattcccaaacattaacgatgta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gaagcggctacagatgtagcaacagtagtaagccaagcaaaagcacagttcaaaaaaagca 144
                                                                                                                                                                                                                               gcaaaagcacaagaacttcgcgacagcttaatttatgatattaccgttgcaatgaaagcg
                                                                                                                                                                                                                                                                                                 gtcattttagatcgcgtatatggtaaaacaactcgtgatttacttcgctctacatttaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.1%;
ilarity 44.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note-"emb|CAB75469.1
gene_id:F1D9.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(join(87685. .88025
88953. .89075,89158. .89715))
/note="gene_id:FID9.19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="copia-type reverse transcriptase-like protein"
complement(join(81294. .81521,81620. .82285))
/note="gb|AAD23008.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /pseudo
/evidence=not_experimental
76515..80547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strong similarity to unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene_id:F1D9.18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 77; DB 13;
Pred. No. 0.00051;
0; Mismatches 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .88025,88101.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 111554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .88185,88231.
                               793
110669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                       444
                                                                                                                                                                                                                                                                                                                                                                                                      110320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384
                                                                                                                                                                                                  110500
                                                                                                                                                                                                                                                                                                     564
                                                                                                                                                                                                                                                                                                                                    110380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      110260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

QΥ

В Ş 밁 οy Ş

δ 밁 Ş В Ş 밁

Вþ γ В δõ DЪ δõ 밁 Ş DЬ δÃ 멍

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
AF056936
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (01-APR-1998) Humanparasitology, Institute Medicine, Wilhemstrasse 27, Tubingen 72074, Germany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 5420)
Kun,J.F.J., Waller,K.L. and Coppel,R.L.
Plasmodium falciparum: Structural and functional domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat structures in a Plasmodium falcipa
binds human erythrocyte protein 4.1
biochem. Parasitol. 50 (2), 335-347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plasmodium falciparum Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium. 1 (bases 1 to 5420)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antigen gene, complete AF056936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mature-parasite-infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF056936.1 GI:3044184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum mature parasite-infected erythrocyte surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF056936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kun, J.F.J. and Coppel, R.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 5420)
                                                                         KITSEFRETENVKITEESKÖRGGKVSGPYENSSNSMVTSESEETKKLAKEELENGEK
LGENVNDGASENSEDDKKLTFOCKNOTRESSETEDDKEESEKKLAKKENGEKKKK
LGENVERSENSEDDKKLTFOCKNOTRESSETEDDKEENEKADNKKKSKKKKS
FROMLGCNFLCHKNIETDDEEETLVVKDDAKKKKFLREANTEKNDNEKKDLLGGD
KEDVKEKRUDEOKDKVLGEGDKEDVKEKNDEOKOKVLGEGDKEDVKEKRYLGKOKLLGGD
KEDVKEKRUDEOKDKVLGEGDKEDVKEKNDEOKOKVLGEGDKEDVKEKRUDGKKDKVIGS
EKTOKEIKEKVEKRVKKCKKKVKKGIKENDTEGNDKVKGPEIITEEVKE
EIKHVEEGIKENDTESKDKVLGOEVIEEVKKPLEGOTKENDTEGNDKVKOPEIITEEVKE
EIKHVEEGIKENDTESKDKVLGOEVILEEVKYVIKKVEKGIKENDTENKDKVIGOE
IIVEEVKEKGIKENDTESKDKVIGOEVILEEVKYVIKKVEKGIKENDTENKDKVIGOE
IIVEEVKEKGIKENDTESKDKVIGOEVILEEVKSVIKKVEKGIKENDKONTEOKKK
EVKEVKKEKGIKENDTESKDKVIGOEVILEEVKKVIKKRUNKUNDKVIGOE
IIVEEVKEELEKOPEGIKENDTESKDKVIGOEIIIEIKKEVEKGIKENDKONTEOKKK
EVKEVKKEKEEVKEKEVKEKEEVKEKEEVKEKEEVKEKDITESKDKE
IEQEKEKEEVKEKEEVKEKEEVKEKEEVKEKEEVKEKEVKEKEVKEKEVKEKON
EXENDEKEEVKEKOTANKDKVIGOEIIIEIKEVKEVKKRNKNENKDNVIQ
EIMNEDVNEKOTANKDKVIEOEKEKEEVKEKEEVKEKEVKEKEVKEKEVKEKON
VIVOEIMNEDVNEKOTANDKOKVIEOEKEKEEVKEKEVKEKEVKEKEVKEKENKDNV
VIVOEIMNEDVNEKOTANDKVIEOEKEKEEVKEKEVKEKEVKEKEVKEKENKON
VIVOEIMNEDVNEKOTANKDKVIEOEKEKEEVKEKEVKEKEVKKRNKNENKDNV
IVOEIMNEDVNEKOTANKDKVIEOEKEKEEVKEKEVKEKEVKKRNKNENKDNV
IVOEIMNEDVNEKOTANKDKVIEOEKEKEEVKEKEVKEKEVKKRNKNENKDNV
IVOEIMNEDVNEKOTANKDKVIEOEKEKEEVKEKEVKEKOTESK
DKEIEOGEKEKEEVKEKOTENKONVIEOKOKVIEOKONVIGOEVIIEEVKEE

INTERVEKEVKERVEKENDE
TGESKETGESKETGESKETGESKETGESKETGESKETGESKVTRIYEETKYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NY IECLRNAPY IDDPLWGSVVTDKRNNCLQHIKLLEMQESERRRKQQEEENAKDIEEI
RKKEKEYLMKELEEMDESDVEKAFRELQFIKLRDRTRPRKHVNVMGESKETDESKETD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAC13303.1"
/db_xref="GI:3044185"
/translation="MEVICRNLCYDKKNNMMENEGNKVKKVYNNSSLKKYMKFCLCTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antigen"
                            KEVNKRVNRRNRKNERKDVIEQEIVSEEVNEKDTKNNDKKIGKRVKKPIDDCKKEREV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ICVFLLDIYTNCESPTYSYSSIMNNNDRYVRILSETEPPMSLEEIMRTFDEDHLYSIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:5833"
join(<1. _150,281. .>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="mature parasite-infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="MESA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product-"mature parasite-infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /strain="Palo Alto"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  erythrocyte surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .>5116)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5116)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             falciparum protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             erythrocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  erythrocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (MESA/PfEMP2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MESA) that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for Tropical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of the
```

```
δÃ
                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                    밁
                                                                                                                  밁
                                                                                                                                                Qy
                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                  ΩV
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                     당
                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 404
                                                                                                                                                                                    3606
                                                                                                                                                                                                                                                                                                                                                                                       3426
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3006
                                                                                                                                                                                                                                                                                                                       3486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2946
                                                    3726 AAGATACCGAAAGCAAAGATAAAGAGATAGAACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2826
                                                                               1058 gtattaaagacaaaaatggcaaagaatttaaagaaga 1094
                                                                                                                                                                                                                                                                                                                                                        818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 atacagtaacggaaactggtgaattccccaaacattaacgatgtatatgctgaatacaaca 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 43.1 tes 404; Conservative
                                                                                                                                                                                 AAAAAGATACCGCAAACAAAGATAAGGTGATAGAACAAGAAAAAGAAAAAGAAGAAGTAA
                                                                                                                                                                                                                gtaacattccatttgcccttaatacggcagatgtttctttatctacagacggaaaaacta
                                                                                                                                                                                                                                                                      aaaacaaagctgttgaattaacagcagtaccagtgaacggaacactaaaattacaacttt 877
                                                                                                                                                                                                                                                                                                                                                                                                                                                     acttaccaaaagtaacagatgctttcaaaaactgaactaacagaagtagcgaaaaaagcat 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcgtatatggtaaaacaactcgtgatttactttgctctacatttaaagcaaaagcacaag 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aacaat---actatcacaaaattccttatgaaattaaaactcgcacagtcattttagatc 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAAGAAGTAAAAGAAGTTAAAGAAAAAGATACCGAAAACAAAGATAAAGTGATAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tagacgaaatgcgccaagagctagaggctgctgttcaagcaaaaggatttagaaaaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAAGTAAAAGAAAAAGATACCGAAAGCAAAGATAAAGAGATAGAACAAGAAAAAAGAAA 3065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctaaatctggcgaagctcgtgtagcaacttacatcgatgcttacaactatgcaacaaaat 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aagacgcttacttagctgatttacaaaaagaatatgaaacttacgttttcaaagcaaacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aagcgaaaaaacgataccgtgatgcggtagcattagtgaataaagcaggtggcgcgaaaa 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tcactgtggatgcttcaactccattcgaaaataatacggagtataaagtagtagttaaaag
                                                                                                                                                                                                                                                   ATAAAAATGAAAACAAAGATAATGTGATAGTACAAGAAATAATGAACGAAGATGTTAACG
                                                                                                                                                                                                                                                                                                                     AAGAAGAAGTAAAAGAAGTTAAAGAAAAAGATACCGAAAACAAAGATAAAGTGATAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                   tagatgcagatgaagctgcgcttactccaaaagttgaaagtgtaagtgcgattaacactc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aacttcgcgacagcttaatttatgatattaccgttgcaatgaaagcgcgcgaagtacaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAAAATGAAAACAAAGATAATGTGATAGTACAAGAAATAATGAACGAGATGTTACGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2911 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NVVHQILNYEERIRMYEENAARGRLNTVILDPIITFNVIFGDDTMFKFIDE" 350 c 1079 g 1080 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 73;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.0036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 5420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              υ
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                    3725
                                                                                                                                                 1057
                                                                                                                                                                                   3665
                                                                                                                                                                                                                                                                                                                                                                                   3485
                                                                                                                                                                                                                                                                                                                                                                                                                                                     3425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3005
                                                                                                                                                                                                                                                   3605
                                                                                                                                                                                                                                                                                    937
                                                                                                                                                                                                                                                                                                                     3545
                                                                                                                                                                                                                                                                                                                                                                                                                   817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2945
                                                                                                                                                                                                                  997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC024253
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chemistry: Dye-primer ET; 100% of reads chemistry: Dye-terminator Big Dye; 0% of read Assembly program: Phrap; version 0.90319 consensus quality: 175235 bases at least Q40 Consensus quality: 176522 bases at least Q30 Consensus quality: 177171 bases at least Q20 Insert size: 198000; agarose-fp Insert size: 178453; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality coverage: 4.48 in Q20 bases; agarose-fp Quality coverage: 4.99 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name: H_NH0758C19
Center project name: H_NH0758C19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (28-FBB-2000) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. MO 63108, USA
On Sep 1, 2000 this sequence version replaced gi:8568958.
                                                                                                                                                                                                                                                                                                                                                                                                                               * NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces consists of 12 contigs order in this sequence record is arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: M13; 100%
Sequencing vector: plasmid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 179553)
Waterston,R.H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens chromosome SEQUENCE, 12 unordered pAC024253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Washington University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The sequence of Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS_PHASE1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC024253.4 GI:9959959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC024253
                                                                                                                                                                                                                                                                                                                                                             runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number wil be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 179553)
                                                                               90566
90666
117184
117284
113020
163120
                               166939
167039
169313
red.

7554: contig of 7554  
7654: gap of unknown length
16349: contig of 8695 bp in length
16449: gap of unknown length
26475: contig of 10026 bp in length
5 26575: gap of unknown length
6 35880: contig of 3035 bp in length
11 35980: gap of unknown length
11 90565: contig of 26030 bp in length
111 90565: contig of 26455 bp in length
566 90665: gap of unknown length
117283: contig of 26518 bp in lengt
7184 163019: contig of 26518 bp in lengt
7184 163019: contig of 45736 bp in lengt
53020 163119: gap of unknown length
16930: contig of 45736 bp in lengt
53020 163119: gap of unknown length
169312: contig of 2774 bp in lengt
169331: gap of unknown length
169312: gap of unknown length
                                                                                                                                                                               7555
7655
16350
16450
26476
26576
35881
35981
62011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
2000 this sequence version replaced gi:8568958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NA HTG clone RP11-758C19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-SEP-2000
WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center
```

Louis,

```
BASE COUNT
ORIGIN
              5
                                                    밁
                                                                                      δõ
                                                                                                                         В
                                                                                                                                                           QΥ
                                                                                                                                                                                                밁
                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                           δô
                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                              Db 174497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db 174437 TACTGTTATTACTGCAATTTCTGTTGCTACTGCTGCTGTTGCTGTTGCTGTTGCTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 1.9%; Score 71.4; DB 68; Best Local Similarity 41.4%; Pred. No. 0.0044; Matches 735; Conservative 0; Mismatches 1018;
                                                174797 TACIGITGITGITGCIGCIGCIGCIGCITATIGITGCIGCIGCIGCIGCIGCIGTIGCITACIGC 174856
                                                                                                                                                                                                174677 TGTTGCTGTTTTTACTGCTGCTATTGTTGCTGATGCTGCTGCTGCTATTGCTATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1299 tocagtaattgcatctacttctggttctacaattactattacgttaaaagaagcgttagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                       atct99taca9tt9tt9cttct9aactaaaatataat9ca9ac9ctaaaat9gtaacttt
agtgccaaaagcggaccttaaagaaaatacaatctatcaaatcaaaattaaaaaaggctt
                                                                                                                                                                                                                 attggctggtggtgaatgaagctggaacttattatcctggtcttcaattcacaacaac
                                                                                                                         gtttgctactaagttagacgaatctactttagctgataactttgtattagttgaaaaaaga
                                                                                                                                                                                                                                                                  tactactttaggtggtacaactttatctactggttctctttacaacaaatgtttggggtaa
                                                                                                                                                                                                                                                                                                                                           TGTTGCTGATACTGTTGCTATCGTTGCTTTTGTTATTGTTGCTGTTGTTGCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                         agaagettaegagttagtgtteaetgeaaaegeateageaeeaaetgttgetaeegetee 1478
                                                                                                                                                                                                                                                                                                                                                                                                                TGCTGTTGATTGTGATGCTATTGCTGTTGCTGATGCTTTTGTTGCTATTGCTGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                           aactggtaaacaatataaacttgctatcaataatgttaaaacattaactggttacaatgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169413
171640
171740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13 171639: contig of 2227 bp in length (10 171739: gap of unknown length (10 179553: contig of 7814 bp in length Location/Qualifiers (1. 179553)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_name:Contig7"
171740. .179553
/note="assembly_name:Contig9"
. 37751 c 36838 g 54991 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vector_side:right"
167039. .169312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig6"
169413. .171639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note-"assembly_name:Contig17"
163120. .166938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_name:Contig16"
117284. .163019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90666.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26576. .35880
/note-"assembly_name:Contigl3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /chromosome="6"
/clone="RP11-758C19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig15"
90666. .117183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16450. .26475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="assembly_name:Contig10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="assembly_name:Contig8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="assembly_name:Contigl4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_name:Contig12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_name:Contig11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .16349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .90565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .62010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .16931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 179553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                  1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                1418
                                                                                                                                                                                                                                                                                                         1538
                                                                                                                                                                                                                                                                                                                                                                                                                174556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    174496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1358
                                                                                                                         174796
                                                                                                                                                             1658
                                                                                                                                                                                                174736
                                                                                                                                                                                                                                                                      174676
                                                                                                                                                                                                                                                                                                                                         174616
```

w ••

```
Ş
                                                                                                                         γ
                                                                                                                                                                     밁
                                                                                                                                                                                                          QY
                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
  밁
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175157
  175916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       175454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 174917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174857
                                                                                                                                                                                                                                                     175754
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2079
                                                                                                                                                                                             agetgetgetgacaaagatggteaaaaegettetgetgeatteecaaeaageaetgeaat 2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGCTACTATGGTAATGATTGCTGCTGCTGCTGCTGCTGCTGCTGCTACTACTAC
                                                                                                                                                                     TGCTGCTACTATTACTGTTGCTATTGCTGCTGCTACTGCTGCTGGTGTTTGCTGCTACTGT 175855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            accaacggttacaaaagtattcaaaggtgattctttaaaagacgctgatgcagttactac 2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGATACTGTTGCTATCGTTGTTGTTGTTGCTGTTGCTGCTGCTGCTAC 175336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTACTGTTGCTATTGCTGCTGCTACTGCTGCTGCTGCTGCTACTGTTGTTGCTAC
  TGCTACTTCTGTTGCT --
                                                                                                                 tgatacaactaagagcttattagttgaattcaatgaaactgatttagcggaagttaaacc
                                                                                                                                                                                                                                                     TGCTGTTATTGTTGCTGATGCTGCT---
                                                                                                                                                                                                                                                                                                                                     gcgtctggtagtagataagtcttctactgatggaattgctgatgtagctggtaatgtaat 2618
                                                                                                                                                                                                                                                                                                                                                                                                                    CNCTGCTACTGTGNCTATTGTGGCTTTTGTAATTGTTGCTCTTGTTGCTGCTGCTGCTAC 175693
                                                                                                                                                                                                                                                                                                                                                                                                                                                agtaacagctgctgtggttacattaactggtcttgacaataacgacaaagatgcgaaatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTACTGTTATTACTGCGATTTCTGTTGCTACTGCTGCTGTTGCTGTTGCTGTGGCTAT 175573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGCTGGTGTTGCTACTGTTGCTACTATGGTAATGATTGCTGCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acttacgaacgttgatgcaggtcaaaaattcactatccaatttagcgaagaattaaaaac 2378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aaatactttagcaactaactatatctatacatttacaactgaaggtcaagacgtaacagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gtacaaattagtagtgttcggtaaaggtgcaacagctcctgttaaagatgctgcaaatgc 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGCTGTTGCTGTTTTTACTGCTGCTATTGTTGCTGTTGCTGTTGCTGTTGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgcaaacttatctgctcttacagcaagtgacatcattccagctagtgttgaagcggttac 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgctacaaccgtttcgggtagcacaatcacatacggtcaagttgctgtagtaaaagcggg 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tcaagacttaactgctcctacagttattagcgtaacgtctaaaaaatggcgacgctggatt 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaagtccgataaaggtattgaattaggcactgttaacgagaaaacatatgagttcaaaac 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTATTGTTGCTCTTGTTGCTGCTGATGCTACTGCTATTGCTGCTGCTAC
                                    tgagaacatcgttgttaaagatgcagcaggtaatgcggtagctggtactgtaacagcatt 2858
                                                                                                                                                                                                                                                                                        taaggaaaaagatattttaattcgttacaacagctggagacacactgtagcttctgtgaa 2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTACTGTTGCTATTGCTGT---TGCTGCTACTATTACTGTTGCTATTGCTGCTACTAT 175453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tggtcaagatggaacatacaaagtgaaagttgctgctaaccaattagaacgtaaccaagg 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGTTGCTGTTAATTGTGATGCTATTGCTGTTGCTGATGCTTTTGTTGCTATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aaaagtaactgaagctcaagaatttactgtgaagttctcagagaatttaaatacatttaa 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGGTAATTATTGCTGCTGCTGCTGCTGCTTGTTTACTGTGATTTCTGTTGCTACTGC 175036
-GCTGCTGCTGTTATTGCTGCGACTTCTGTTGCTACTGC 175972
                                                                                                                                                                                                                                                     -ACTGTTGCTATTGCTGT 175795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 174976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175156
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
AC087877/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tgcagttaacgttgaccgttctaaaacaattacaatt 3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATTCTGTTGCTATTGCTGCTATTGCTAAAATTGTTGCTGCTGTTGTTGCTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ttactctgtaacaattgacggtgtgagagataaagtaggtaacacaatctctaaatacat 2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATTTTGCTATTTCTGTGGCTATTGTTGCTGCTGTTGCTCTTAATTGTGATGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agacggttctacaaataaatttgtattcactccatctcaagaattaaaagctggtacagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGCTGCTGATGCTGTTACTGTTACTATTGCTATT 176189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTTTTGTTGCTGTTTCTGTTGCTTTGTTATTGCTGCTGCTGCTGCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tacttcgttcaagactgtatctgcgaatccaacgttatcttcaatcagcattgctgacgg 3038
                                                                                                                                                                                                                                                                                                                                                                                                                              Web site: http://www.cshl.org/genseq
Contact: mccomble@cshl.org
------ Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 208006)

McCombie, W.R., Baker, J.P., Bahret, A., Bal, H., Balija, V., McCombie, W.R., Bastide, M., Huang, E.N., King, L., Kirchoff, K.A., Miller, B., Nascimento, L.U., O'Shaughnessy, A.L., Preston, R.R., Rodriguez, S., Santos, L., Shah, R.S., Spiegel, L.A., Toth, K., Vil, M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC087877 208006 k
                                                                                                                                                                                                                                                                                                                                                                                        Center project name: RP23-9L
Center clone name: RP23-9L21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (03-FEB-2001) Lita Annenberg Hazen Genome Sequencing Center, Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold S Harbor, NY 11724, USA
On Feb 24, 2001 this sequence version replaced gi:12658030.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Lita Annenberg Hazen Genome Center, Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 208006) McCombie, W.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC087877.2 GI:13
HTG; HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center code: CSHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse Genomic Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nouse mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unordered pieces
                                                                                                                                                                                                                                          NOTE: This is a 'working draft' sequence. It currently consists of 32 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                    as soon as i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zutavern, T
                         23098
23330
39330
39562
39562
53029
53261
64738
64970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:13122756
                                                                                                                                                                                                                              it is available
                         64969:
74807:
                                                               53028:
53260:
64737:
                                                                                                                        23329:
39329:
39561:
                                                                                                                                                                                      23097:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp DNA
• RP23-9L21,
                   7: contig of 23097 bp in length
9: gap of unknown length
9: contig of 16000 bp in length
1: gap of unknown length
1: gap of unknown length
0: gap of unknown length
7: contig of 11477 bp in length
9: gap of unknown length
9: gap of unknown length
7: contig of 9838 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                RP23-9L21
of unknown length
lg of 13467 bp in length
of unknown length
lg of 11477 bp in length
lg of 11477 bp in length
of unknown length
lg of 9838 bp in length
of unknown length
                                                                                                                                                                                                                              and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCING
                                                                                                                                                                                                                          accession number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cold Spring Harbor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-FEB-2001
@GRESS ***,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vil,M.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            176152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Spring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32
```

```
BASE COUNT
ORIGIN
                                             FEATURES
                                      source
         59324
                                                                                   188568
191343
191574
194264
194495
197137
197368
199978
200209
2002751
                                                                    205345
205576
                                                                                                                                                                        185346
188337
                                                                                                                                                                                       177907
181803
182034
185115
                                                                                                                                                                                                                             148486
148717
154024
159033
159263
159264
164022
164253
168885
168885
169116
                                                                                                                                                                                                                                                                                                                           142822 \\ 143053
                                                                                                                                                                                                                                                                                                                                           75040
84784
85016
94438
94670
103284
111092
1111324
1111324
111324
1118477
1118477
1124867
125098
137326
                                                                                                                                                                                                                       177676
             /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="RP23-9L21"
                                             Location,
                                    . 208006
                                                                   199977: contig of 2610 k
200208: gap of unknown l
202750: contig of 2542 b
202981: gap of unknown l
205344: contig of 2363 b
205575: gap of unknown l
207749: contig of 2174 b
                                                                                                                                                                                                                      154023
154254
159032
1159263
1159263
164021
164252
16884
168884
169115
173323
173353
173353
173553
177675
177906
                                                                                                                                                                                      181802:
182033:
185114:
185345:
                                                   207749: contig of 2174 bp in length 207980: gap of unknown length 208006: contig of 26 bp in length.
                                                                                                                 188336:
188567:
191342:
191573:
194263:
194263:
197136:
197367:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             84783:
85015:
       ი
                                             /Qualifiers
                                                                                                                                                                                                                                                                                                                                         gap of contig gap of gap of contig gap of contig contig
                                                                                                                        gap of contig gap of contig gap of
                                                                                                                                                               gap of contig gap of contig
                                                                                                                                                                                                                                                                                                          gap of contig gap of contig
                                                                                                                                                                                              gap of
contig
gap of
contig
                                                                                                                                                                                                                             gap of
contig
                                                                                                                                                                                                                                            gap of contig gap of contig
                                                                                                                                                                                                                                                                           gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                       gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                       gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
      g
                                                                                                                                                                                                                             unknown
of 4121
                                                                                                                                                                                                                                                            unknown
of 4632
                                                                                                                                                                                                                                                                            of 4758
                                                                                                                                                                                                                                                                                           of 4778
                                                                                                                                                                                                                                                                                                                                                                                                       unknown
of 7152
                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 9744
unknown
                                                                                                                          unknown
                                                                                                                                  of 2642
                                                                                                                                                 of 2690
                                                                                                                                                               of 2775
                                                                                                                                                                               of 2991
                                                                                                                                                                                               of 3081
                                                                                                                                                                                                                                             of 4208
                                                                                                                                                                                                                                                                                                                                                         of 5756
                                                                                                                                                                                                                                                                                                                                                                                                                       of 7576
                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
       60335
                                                                                                                                         unknown
                                                                                                                                                         unknown
                                                                                                                                                                                        unknown
                                                                                                                                                                                                              of 3896
                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                            of 5307
                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                          of 5433
                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                           of 5496
                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                        of 6010
                                                                                                                                                                                                                                                                                                                                                                                        of 6160
                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                       of 8614
                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 9422
                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                           bp in length
                                                                                          bp in l
                                                                                                                          bp in 1
length
                                                                                                                                              pp in
                                                                                                                                                                        bp in .
length
                                                                                                                                                                                                                      bp in ]
length
                                                                                                                                                                                                                                                                   bp in 1
                                                                                                                                                                                                                                                                                   bp in l
                                                                                                                                                                                                                                                                                                   bp in l
                                                                                                                                                                                                                                                                                                                                                 bp in l
                                                                                                                                                                                                                                                                                                                                                                       length
bp in
                                                                                                         bp in length
length
                                                                                                                                                                                               ďď
                                                                                                                                                                                                                                                                                                                                         bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                              þ
                                                                                                                                                                                                                                            bp in length
                                                                                                                                                                                                                                                             ģ
                                                                                                                                                                                                                                                                                                                          ďď
                                                                                                                                                                                                                                                                                                                                                                                        ďq
                                                                                                                                                                                                                                                                                                                                                                                                       ģ
                                                                                                                                                                                                                                                                                                                                                                                                                       dq
                                                                                                                                                                                                                                                                                                                                                                                                                                      ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ďq
                                                                                                                                                               bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                         length
                                                                                                                                                         length
                                                                                                                                                                                        length
                                                                                                                                                                                                        length
                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                  length
      7197 others
                                                                                                                                                                                                                             in length
                                                                                  length
                                                                                                  length
                                                                                                                                                                                                                                                                                           length
                                                                                                                                 length
                                                                                                                                                 length
                                                                                                                                                                length
                                                                                                                                                                              length
                                                                                                                                                                                               length
                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
```

```
ρ
                                    망
밁
                                                                          Matches
                                                                                 Query Match
Best Local Similarity
                                     31578
71
                                              11 aaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcatttgtcgctgcaa 70
          atccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaagcaaaagcac 130
                                   216;
                                                                          Conservative
                                                                                1.8%;
                                                                         0
                                                                               Score 66;
Pred. No.
                                                                         Mismatches
                                                                                 0.037;
                                                                                        DB 77;
                                                                        250;
                                                                                        Length 208006;
                                                                         Indels
                                                                        0;
                                                                       Gaps
                                   31519
31459
```

0

856

88370

796

88250

genes,

```
WPCOMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT PFMAL4P1
 В
                             Q
                                                           В
                                                                                     οy
                                                                                                                     밁
                                                                                                                                              Ş
                                                                                                                                                                              Вþ
                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Continuation (2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence split
 87711
                                                                                                                                                                                                                                                                                                                                                              87771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fragment Name
PFMAL4P1_0
PFMAL4P1_1
PFMAL4P1_2
PFMAL4P1_3
PFMAL4P1_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31338
                                                                                                                                                                                                                                                                                                    87831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31398
                                                                                                                                                  497
                                                                                                                                                                                                              437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                       377
                                                                                                                                                                                                                                                                                                                                 317
                                                                                                                                                                                                                                                                                                                                                                                          257
                                                                                                                                                                                                                                                                                                                                                                                                                                                  197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
mes 306; Conserv
                  tyaaagcycycyaagtacaagacyctytyaaagcaggcaatttagacaaagctaaagcty
                                                           AAGAAAATGATGATGACGAAGAAAATGATGATGAAGAAAATGATGATGACGTAGAAA
                                                                            catttaaagcaaagcacaagaacttcgcgacagcttaatttatgatattaccgttgcaa
                                                                                                                                           ctcgcacagtcattttagatcgcgtatatggtaaaacaactcgtgatttacttcgctcta
                                                                                                                                                                              TAGAAAATGATGATAACGAAAATGATGATGACGAAGAAAATAATGATAACGAAAATGATG
                                                                                                                                                                                                aagcaaaagatttagaaaaagcagaacaatactatcacaaaaattccttatgaaattaaaa
                                                                                                                                                                                                                                                                                                    GAAATGACGATGGCGAAGAAAATGATGATAATGAAAAGGATGATGATGACGAAGAAAAAG
                                                                                                                                                                                                                                                                                                                      aaacttacgttttcaaagcaaaccctaaatctggcgaagctcgtgtagcaacttacatcg
                                                                                                                                                                                                                                                                                                                                                           acgatgtatatgctgaatacaacaaagcgaaaaaacgataccgtgatgcggtagcattag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgttcaagcaaaagatttagaaaaagcagaacaatactatcacaa 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGAAGCAGCAGAAGAAGCAGAAGAAGAAGAAGAAGAAGCAGAAGCAGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acatcgatgcttacaactatgcaacaaaattagacgaaatgcgccaagagctagaggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aatatgaaacttacgttttcaaagcaaaccctaaatctggcgaagctcgtgtagcaactt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acattaacgatgtatatgctgaatacaacaaagcgaaaaaacgataccgtgatgcggtag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agttcaaaaaagcatactatacttacagccatacagtaacggaaactggtgaattcccaa
                                                                                                                     ATGACGTAGAAAATGATGACGTAGAAAATGATGATGACGAAGAAAATGATGATGATG
                                                                                                                                                                                                                                        ATGATGAAGAAGAAAATGATGATGACGAAGAAAATGATGATGACGAAAAATGATGACG
                                                                                                                                                                                                                                                                  atgcttacaactatgcaacaaaattagacgaaatgcgccaagagctagaggctgctgttc
                                                                                                                                                                                                                                                                                                                                                                                tgaataaagcaggtggcgcgaaaaaagacgcttacttagctgatttacaaaaagaatatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAAGCAGAAGCAGAAGCAGAAGCAGAAGACAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of PFMAL4P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100001
200001
300001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 64.2; D
Pred. No. 0.08
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110000
210000
310000
392633
from ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            End
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64.2;
No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PFMAL4P1 Accession AL034557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AL034557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 110000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
 88190
                                                                                                                                                                              88010
                                                                                                                                                                                                             496
                                                                                                                                                                                                                                        87950
                              676
                                                                                        616
                                                                                                                                                  556
                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                    87890
                                                                                                                                                                                                                                                                                                                                 376
                                                                                                                                                                                                                                                                                                                                                              87830
                                                                                                                                                                                                                                                                                                                                                                                        316
                                                                                                                                                                                                                                                                                                                                                                                                                                                 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190
                                                           88130
                                                                                                                     88070
                                                                                                                                                                                                                                                                                                                                                                                                                     87770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
S76368/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88251
                                                                                                                                                                                                                                                                                                                                                                                                                    gene
 CDS
                             gene
                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTACATTTAAAAGAAACGCCAAAAGATGAAAATGAAGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gaacactaaaattacaactttcagctgctgcaaattgaagatacagtaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtgtaagtgcgattaacactcaaaacaaagctgttgaattaacagcagtaccagtgaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAAAATGATGATAACGAAGAAAATGATGATAACGAAAATGATGATGATGAAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGATGAAGAAAATGATGATGAAGAAAAATGATGATAACGAAGAAAATGATGATAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctgttgatcaaatcaatcaatacttaccaaaagtaacagatgctttcaaaactgaactaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGATAATGACGATGTTAATGAAATTAATAGTGAGAAAAATAAAAAATCAGCTCGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saimiriine herpesvirus 2 host-squirrel monkey
Saimiriine herpesvirus 2
Viruses; dsDNA viruses, no RNA stage; Herpesv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S76368 3720
ORF 5' of ECLF2. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry [NCBI gibbsq 76368] from the This sequence comes from figlb.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nicholas, J., Cameron, K.R. and Honess, R.W. Herpesvirus saimiri encodes homologues of receptors and cyclins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S76368.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenBank staff at the National Library of Medicine created entry [NCBI gibbsq 76368] from the original journal articles.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 355 (6358),
92115001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses; dsDNA viruses, no RNA stage; Gammaherpesvirinae; Rhadinovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          herpesvirus saimiri HVS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 3720)
                        complement(978.
                             CYLEDLSSILNFSTNTVRTVKDQVSEAFSLYDLEIL" complement(978. . 2476)
                                                        /translation="MADSPNRLNRAKIDSTTMKDPRVLNNLKLRELLLPKFTSLWEIQ
TEVTVUNTILLTWMHLLCESSELDKSVFPLSVSILDRXLCKROGTKKTLOKIGAACV
LIGSKIRTVKPMTVSKLTYLSCDCTPVLELLNOEKDILEALKWDTEAVLATDFIIFLG
NALKIPEDLWPQLYEAASTTICKALIQPNIALLSPGLICAGGLLTTIETDNTNCRPWT
                                                                                                                                                                                          /note="cyclin homolog"
complement(184. .948)
                                                                                                                                                                                                                       complement(95. .977)
/gene="ECLF2"
                                                                                                                                                                                                                                                    /translation~"MDLKTTVLHITDSFTDEEMYCLLFLINGCIPRSCNAVNISDLII
ETLSKSTQWDICLMQCL"
                                                                                                                                                                                                                                                                                                                                                                         complement(1.
                                                                                                                                                                                                                                                                                                                                                                                                                    complement(1.
complement(1004.
                                                                                                                  /protein_id="AAB21115.1"
/db_xref="GI:243352"
                                                                                                                                                                                                                                                                                 /protein_id="AAB21118.1"
/db_xref="GI:243355"
                                                                                                                                                                                                                                                                                                                                                         /partial
                                                                                                                                                                                                                                                                                                                                                                         /gene="ORF 5' of ECLF2" complement(1. .183)
                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Saimiriine herpesvirus
/db_xref="taxon:10381"
                                                                                                                                                 /codon_start=1
                                                                                                                                                             /note="cyclin homolog; This sequence
                                                                                                                                                                              /gene-"ECLF2"
                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                            /note="This sequence comes
                                                                                                                                                                                                                                                                                                                                             /gene="ORF 5' of ECLF2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:243351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bp DNA
ECRF3-G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   362-365 (1992)
               of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NA VRL 07-MAY-1993
-G protein-coupled receptor homolog host-squirrel monkey, Genomic, 4 gen
                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Herpesviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of G
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         journal article.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein-coupled
                                                                                                                                                               comes from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            905
```

this

fig1b"

```
BASE COUNT
ORIGIN
 LOCUS
                HSV3PRGEN/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local 9
                                                                             1564
                                                                                                                                        1624
                                                                                                                                                                                                     1684
                                                                                                                                                                                                                                                               1744
                                                                                                                                                                                                                                                                                                                          1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sg
                                                                                                                                                                                                                                                                                                                                                                                    430
                                                                                                                                                                     370
                                                                                                                                                                                                                                310
                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aatccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaagcaaaagca 129
                                                                           GAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAA 1529
                                                                                                      gctgttcaagcaaaagatttagaaaaagcagaacaa 465
                                                                                                                                     GAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCT
                                                                                                                                                                  tacatcgatgcttacaactatgcaacaaattagacgaaatgcgccaagagctagaggct
                                                                                                                                                                                                GAAGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCT
                                                                                                                                                                                                                  GAAGCTGAAGAAGAAGCTGAAGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGCT 1685
                                                                                                                                                                                                                                                                               GAAGCTGAAGAAGCTGAAGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                             aacattaacgatgtatatgctgaatacaacaaagcgaaaaaaacgataccgtgatgcggta
                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGAAAAAGAAGCTGAAGAAGAAGAAGCTGAAGAAGAAGAAGAAGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcatttgtcgctgca 69
                                                                                                                                                                                                                                                                                                                                                                                                               cagttcaaaaaagcatactatacttacagccatacagtaacggaaactggtgaattccca
 HSV3PRGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AIVYGIQCTYMLLVLYYCMLPLMFAMFGSLFRQRMAAWCKTICHC"
731 c 675 g 1393 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMNTELCKLEAFFLNLSIYWSPFILVFISVLRCLLIFCATRLWVKKTLIGQVFLCCSF
VLACFGALPHVMVTSYYEPSSCIEEDGVLTEQLRTKLNTFHTWYSFAGPLFITVICYS
MSCYKLFKTKLSKRAEVVTIITMTTLLFIVFCIPYYIMESIDTLLRVGVIEETCAKRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="G protein-coupled
comes from fig1b"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/protein_id="AAB21116.1"
/db_xref="GI:243353"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYVLMFLCNAIGNSLVLRTFLKYRAQAQSFDYLMMGFCLNSLFLAGYLLMRLLRMFEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAB21117.1"
/db_xref="GI:243354"
/translation="MEVKLDFSSEDFSNYSYNYSGDIYYGDVAPCVVNFLISESALAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="ECRF3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="ECRF3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKASLGKFSKSLPIE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLSFPGAVSSGIQTFPKGPHATGPWVYFITVYCRTFQTAKEVIKAQKKYEKKYPRSAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="ORF 5' of ECRF3"
/note="This sequence comes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=]
43658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "G protein-coupled .3691
đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ·0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    receptor homolog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245;
VRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 homolog'
02-AUG-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                    1805
                                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1925
                                                                                                                                                                                                1625
                                                                                                                                                                                                                                                                                          309
                                                                                                                                                                                                                                                                                                                         1745
                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                     249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

밁

9 В δÃ

Ωy В

멍

Ωy 밁 δõ 밁 γQ рЬ Qy

В

```
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nicholas,J., Cameron,K.R., Coleman,H., Newman,C. and Honess,R.W. Analysis of nucleotide sequence of the rightmost 43 kbp of Herpesvirus saimiri (HVS) L-DNA: General conservation of genetic organization between HVS and Epstien-B arr virus Virology 188, 296-310 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saimiriine herpesvirus 2
Viruses; dsDNA viruses, no RNA stage:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                reductase large subunit; ribonucleotide reductase small subunit;
tegument protein; thymidylate synthase; transactivator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA-binding protein; capsid protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M86409
M86409.1 GI:330976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gammaherpesvirinae, R
1 (bases 1 to 43658)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transpressor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Herpesvirus saimiri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Herpesvirus saimiri (strain 11) DNA
                                                                                                                                                                                                            /note="EDRF1 ORF" 3319. .4128
                                                                                                                                                                                                                                                                                                            FKKFSTANISTLLONPKEILEMDPFDPRIGGFPLNKEETATPLKDSSFSNPTFINTGA
ANTLLAASVYTPALLESLESPTHFPCMSDESIASTSHVPLDNNISLETLVKYNFPLKRK
ROSRNIDPNYPBRRPKGRSKYKKRRPTCSPALLEOSSDIPTDSLHVKCPEMLPTVPON
EFCDSSNIOPCTSSSVLENDNLVPINEAETDDNILATILODLYDLPAPPVLCSHENOT
                                                                                                                                                                                                                                                                                                                                                                                                                  HÓLLVAFNÓSLYTPTÖDEEK ILSDÍORACLQIAEDLKHLNPFTGLLLDLNLYTLWTLL
RNYKTORSOPVNSTVYSRYAHHVVKYLMORLYYTTÖBLEFLÄPSTGIYLPVPLANAI
FNLSHCRKKOTGLRANYGTEK SYLMOLGKEITLCVQALNESGIVSTTLAAFIKLSFÖ
TISIPNLEKPMFQSCKGNQDNFPDICTOGSVIRRPHOGVFGDTFPIPDPLMREISENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MSRPYOPORYSLISELHRIFHYUDVSVIOSEFKNVILKTVVPKL
SQPATHLEKGDELKIQQLLMH HREEBQOILNKVKSNIIY FLNEIWSAEYGKVQEVY
NILCEVKLDKTDSELSTYLAQEIPKLTVLKYPTHFKVCEETIPNGRWCLHNLLGIEOY
YKDFSNIVLHDPETSLGSVQAYSRLSKLLFWCDSFMNKIYPCNAFNSSINOVVLMSTM
/translation="mkaqalllcslyllaqstdyddegsgevflqkysssysitasla
ttmltsytnkttqnysyttidslstspmhnatsntsysqttpysqtslsssylistpq
mlnstpnkplsstkltpksqsssqstkttkqasknlttsklatsfsstymttsdqpys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(604. .609)
                                                                     /product="transpressor"
/protein_id="AAA46128.1"
/db_xref="GI:330980"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="transactivator"
/protein_id="AAA46124.1"
/db_xref="GI:330979"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LSTHTDLQNLAEYIYSYKKCLINRRFE" < 1491. .3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FHFYSVAHCNDCISESISFTEALLKQEVSAFYEWCLEEEYEEDRMAKFMKFSADQITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAA46127.1"
/db_xref="GI:330978"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(618. .1529)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VKSSIREIFYDCKARLLLLLEEGCGCGACCATSA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(1.
                                                                                                                                                                                   3319. .4128
/note="first
                                                                                                                                                                                                                                                                                       LEIDNNVDIEDLGLSFPMSLQDFLNDE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      translation="NQRIPLWLVRSTHCLILLFQDDVQVRKSCLEPFLFLSPERKREI/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="5' end of coding region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-"first methionine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note-"EDLF4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MIAFSLTMELSLPVFGYTQANKEEWDNIWKNFQQFPNVSRTLGL
LRRFFLRNDLGFLSAVVILKQYVENLPTTKQKLNLIECTQGLKFLIRSLYEKIKDQCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="AAA46126.1"
/db_xref="GI:555179"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:10381"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism*"Saimiriine herpesvirus
/strain="11"
                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="first methionine codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the most three prime end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rhadinovirus.
                                                                                                                                                                                 methionine
                                                                                                                                                                                   codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dUTPase; ribonucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Herpesviridae;
                                                                                                                                                                                   Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for EDRF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the genome.
                                                                                                                                                                                   EDRF2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EDLF4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EDLF5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 undetermined."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genetic
```

```
Sg
                        polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polyA_signal
                                                                                                                                                                                                        QCLNKDIFIKYSHLTNSDNIHFVPETEVLAQSLDENFRKDMLTYYNKSTYLKTYITHK
CIHLPDLIGYAPQDCTSFVYWAGQSKNVHNLLNVINTTHPHINISEDLNGLLDLAAID
STFNVDNLKDCVFNESQKVPVYRCEFLNKTYFVIVQNDILKNVWSTDVLMPMQENWYM
LKDTEITSNISYKETFTSMLTLRDQLKISRHEYFNPRLPVFNLVLDLOLHIHTSEHEI
                                                                                                                                                                                                                                                                                                                                               /translation="MNEATEAMPKFKVLFATDGDSAEIITDILTGTDTNAFIYSVLHN
CYIYPTEVKIVLICLEAKKPGGGDKCLEVFQLHIDTELAIPELFYTKPLKANDLHKY
IDFKAARKNFKPILDIISTNKPSFKFUNSDIKKKIVWFRAKFVNSLFKLYKISSSFW
MITTFGSFEVPFLLTAIFYFFEQHNCTINTIFHLSSLFEKKLGTSLIAITTFEELGGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="EDRF3 ORF"
complement(5793. .5798)
/note="EDLF1 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAA66131.1"
/protein_id="AAA66131.1"
/db_xref="GI:330983"
/translation="%pryKvpEIYyreEppOTFYITSPARASNIQLINHNNILVKAGQVT
IVSTGIIFPKETSFAPILYGKSAKSIFCHTGLIDPGFOGELKLIVLNKTEDDITLFEN
DLRVSVTAFVYGVPKLHDYSDLCPPKYSKDAGFDLYLPTDVTYKPRVPNRYSYNICCP
AQLKSYKPVLFGRSGLAAKGLTIKVSRWQNQLQIIFYNYTKSQITYTARTRIAQVVFM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/protein_id="AAA6130.1"
/protein_id="AAA6130.1"
/db_xref="Gi:330982"
/translation="MTWKLFICFLSFGVIFLRVSSLTEKSHTTSYTILHNNNFYSNSC
SADYYVPSIKIESSVWAILNVIIFFCASLFYLRHLCIVKFISNLTK"
                                                      TPDNCVTLTLMSQCFASKCNSNKCIAHMSVRVPITDK"
                                                                                                                                                         DEIYNLCCTLRSLILETLQLLGPVDIDTHHYYFFKSTCEKPENWIDNKELKFCYCTKK
LGFRIITPLPAGVVLLGSNPVISFVNILNRTIKIDKKLLAMYPLIMETDGPFDVGIYH
                                                                                                                                                                                                                                                                                                                      CSTSDYLKTAPAFINYCHIKLARDSLESQAIDTSIDTLRGQLMLSNQDLVHYIYLSFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /function="required for DNA replication"
/protein_id="AAA46133.1"
/db_xref="GI:330985"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MLQWLHSCWPFGKYRRQKYVPLDTSSSCPDRWKIEIEIAQPPGV
FVGDILQNSDSDASLRQAYLLAVQLNNITDYLKRFDEASVPESCKSVVQTQITKLKSV
RNIIWNTMLSMAVGGVTIDDAALKTLLDKRAGESIALIEMEKLATAIVMDDSKAWAKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GDAGLGSSGLM*
5761. .5766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AAA46129.1"
/db_xref="GI:330981"
/tanslation="MASRRSCADVEELEKELQKLKIENKALKKKLVQHTSPEDELLTP
AQKDAIINSTVNKLTKKAEEKIRERVLKDVLPLVSKNQCMEAIAHIKYRIDVSIDETY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(4160. .4165)
/note="EDLF3 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KLKPFKPKTQPIVNMQRTWIYPLTGIVSIVVLLIIMSCIHCYIRRFDEHFE" 4124. .4129
                                                                          KQLKAVYDIADTNENFILQKAQAQLPQTNHNAVERIESASHMSITDWVAEFAWPRLFE
LIKLYLSEEKVSQFYHVSFAASTGNIIKIISLSGNFSCLNFKHRLKTQSVRIFLSLHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="AAA46132.1"
/db_xref="GI:330984"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (5797.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleotidohydrolase
/EC_number="3.6.1.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(4549.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NLSRRPASKPRTK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(4161.
                                                                                                                                   KGRCVRIPHTYKVNSSGRLERLLKLFVCHPHVDNKLQYVMDSFDINNLLYHSHNPEKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="first methionine codon in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INNIILSAEHEKQILVNSEVPLIECETLAAEKTTTPAVSI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="first methionine codon in the EDLF1 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HKKHLPTTLTRLKPTMHLSENIKYSWARVSFQDIKTFPVQDEKLYSSSKDTSDSQMSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="dUTPase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /standard_name-"deoxyuridine 5′-triphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"first methionine codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="EDLF2 ORF"
complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement//complement/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note-"first methionine codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="EDRF2 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="first methionine codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 8885
                              . 8886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .4508)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .6399)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ín
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the EDRF3 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EDLF2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EDLF3 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EDRF4
                                                                                                                                                         Ş
В
                                              δÃ
                                                                                                        몽
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                         37683
                                                                                                                                                                                                                37623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                    190
                                                                                                                                                            130
                                                                                                                                                                                                                                                                  70
                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                              211;
```

```
37503 GAAGCTGAAGAAGCTGAAGAAGAAGCTGAAGAAGCTGAAGAAGAAGCTGAAGAAGAA 37444
                                                                                                             37563 GAAGCTGAAGAAGCAGAAGCTGAAGAAGAAGCTGAAGAAGAAGAAGCTGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polyA_signal
                                                                                                                                                                                                                              GAAGAAAAAGAAGCTGAAGAAGAAGAAGCTGAAGAAGCTGAAGAAGCTGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                               aaaaaagctgtgaaactagcaacagcaagtgctattgcagcaagtgcatttgtcgctgca 69
                                                                                                                                                                                                                                                                  aatccaaacgcttctgaagcggctacagatgtagcaacagtagtaagccaagcaaagca 129
                                                                                                                                                                                                                                                                                                                                               AGAGAAGGAGGAGGAGAAGAAGGAAGGAAGAAGAAGCTGAAGAAGAAGCT 37624
                                               aacattaacgatgtatatgctgaatacaacaaagcgaaaaaacgataccgtgatgcggta 249
                                                                                                                                                                cagttcaaaaaagcatactatacttacagccatacagtaacggaaactggtgaattccca 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(12966. .13883)
/standard_name="ribonucleotide reductase beta subunit"
/EC_number="1.17.4.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="EELF2 ORF"
complement(11774.
/note="EELF3 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LGSWVDTSLQVTLFCTPNLAEDTQAAVSDYFPISPSACLTADPADTQEEPTLSSNCQD
SSVENSPALPLKRKREKDINKKSKKIKIAFNPLI"
complement(11774. .11779)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSSP$LRIWSSIGEGILSFKINNVVSEVFNCHMMPENVSVSFRNISPGGNTFLYTREL
FGCNVKTATLMFSNRSGKPFEFIKAKLEYCDKVSTTRHTSTIPAGILPPVENVNSTSV
LSRVVLSPKTAAMLQKWLREHKAHKTVSVMVNSTLAVLILTVEDSTKTVDLHIVDDMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FLCTVCNIVVSVALTCCNKSEQL" complement(11147, .11152)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QISIFYWAVLGAHVTILCYCYITFTKEWSYYIEALGIACLFLTMLTFFISHLMWAPLY
TLPFVFVLNCICLSLWVPITYDIVYLCPFITYKYYELGFLNAMLLYYVMVANRWYLSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YYYWYSMRKETIASANLCTVAAFLDESLCWGQQYLKNDFIFSENGKDIILDTSSALLS
QLVHKIKMLPFCHCLMQTTPQDHIVKQVCYLIASNNRILDAVRYLQTSVIKSPIYLLL
AYAVCLPAAIICTKNETQLYSHCMRILKEYRPGDVMNILHESLTQHLNKCPSSTCAYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="YLGISSDDDFDSSDSSDEEESDTSPQIMKSDVTMASPPSTPEP
SPDVSASTSNLKRERQRSPITWEHQSPLSRVYRSPSPMRFGKRPRISSNSTSRSCKTS
WADRVREAAAQRRPSRPFRKPYSHPRNGPLRNGPPRAPPLLKLFDISILPKSGEPKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(9074.
/note="EELF5 ORF'
<9082...10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAA46134.1"
/db_xref="GI:330987"
/translation="MIQEMMTQWVLNIRASCLGALAATPFIWCFIFKSLFTFSIFTSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(10679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="DNA-binding protein"
/protein_id="AAA46135.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(11749.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="EELF4 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FAVVIIIVIHVLIDKLPISIIGGLLVIVILLMCQAIGCQIEIIRTKLAGDVGGPKLCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IFMCPFVLFLGMGVFALKNFHEHPVFENILITCKPIFTAKNKYKTKGTEVNMKLVVHN
LGAVLFLLAVEFASVVSVVQRLDIFVGMQNYLFLLFVSMLCCCMFSLPSNAICVVLET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="EJRF1 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10425.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRAIVGTKANTTGLFFLPTO"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPVPSLPCQEÄEKTNDKYVLAMAQRAMHDVPISSKQLTANLLPVKFKPLLSIVRYTPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAA46125.1"
/db_xref="GI:330986"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <9082. .10320
/note="5' end of coding region for EJRF1 undetermined."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LCNNPSKDWGVVQNDVQTKVNITALSAALGLCKIPGVFVPCIKFYESEVLEVCGTPVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /function="required for DNA replication"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="first methionine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="transactivator"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation*"MADTQTTHFSYGVGFKPCVLQEHTKIYNHIKAKVKDGIIQIEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="GI:330988"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="first methionine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .10430
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 64; DB 59;
Pred. No. 0.099;
0; Mismatches 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .11779)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .12855)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .11752)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon in the EELF4 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                245; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 43658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the EELF5 ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

Search completed: July 5, 2001, 01:44:45 Job time: 25873 sec

THIS PAGE BLANK (USPTO)